An Address

ON THE

PHYSIOLOGY AND PATHOLOGY OF WORK IN COMPRESSED AIR.

DELIVERED TO THE NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.

BY

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My experience of compressed-air illness has been entirely gained during structural alterations on the Redheugh Bridge, the building of King Edward VII Bridge, and the tunnelling operations which are at present proceeding under the River Tyne between Wallsend and Hebburn. It took four years to build King Edward VII Bridge. In order to support the enormous weight which the bridge is obliged to carry, the piers had to be large, and as these had to rest upon a secure and solid foundation it was necessary to excavate the soil in the bed of the river to the depth of 70 ft. below high-water level mark. In their excavations the workmen passed through strata of silt, gravel, clay, soft coal, etc. The caissons successively in use were large, as may be inferred from the fact that thirty-five men worked in each caisson at one time. The working chambers measured 113 ft. in length, 35 ft. in width, and 9 ft. 6 in. in height, and had a cubic capacity of 23,142 ft. The total number of men employed in caisson work was 150, and the total number of days spent in this kind of work was 267; 48 men worked under air pressure through the three caissons from start to finish without being affected; 29 men worked through two caissons, or 180 days, and remained in good health; and 49 men through one caisson, or 90 days, without symptoms. No man over 40 years of age was allowed to work in compressed air; 4 per cent. of the men applying for work were rejected at the primary medical examination, while 31 men, partly through fear and partly through muscular pains, gave up their employment within a fortnight. The largest number of cases of compressed-air illness occurred when the pressure employed varied between 24 and 32 lb., and principally during the months of September and October. No case occurred under 20 lb. pressure, but there was one case of "bends" at 22 lb. pressure. The largest number of men employed in building the bridge in any day was 750.

A caisson when in position is in its simplest form an iron cylinder, somewhat bell-shaped at its lower extremity, and closed at its upper by a sliding door which forms the ceiling of the chamber wherein the men work, and which separates it from the material lock or the chamber through which the buckets filled with soil escape through the sliding doors that constitute the roof of the caisson. Leading out of the upper part of the caisson at its side, just underneath the ceiling referred to, is an iron door which, when open, allows of entrance into a smaller chamber called the "air lock," and through which the men gain entrance into and emerge from the working chamber proper. If a caisson is large it may have two or three shafts or cylinders leading into it. It is not necessary to have the material lock on the same cylinder as the air lock. In Amsterdam I found the soil was removed through a material lock on a different shaft to that by which the men entered and left the working chamber. This is known as the Zschokké lock, and is worked automatically. On the Tyne all the caissons had three shafts, each with its own air and material locks. When placed in position on the bed of a river, a caisson, being a pneumatic chamber, would swim were it not for the large amount of concrete superimposed upon it. Air under pressure is pumped into the chamber to keep the water out and to allow the men to work therein. The surplus air escapes by the cutting edge of the bell-shaped expansion, and by this means ventilation is secured. In making tunnels the caissons are constructed in rather a different manner, since the line of procedure is not vertical but horizontal. Caissons have to be strongly built so as to withstand enormous air pressures. When the necessary depth has been attained and further sinking is unnecessary, the caissons are filled internally with concrete, and they thus become the foundations upon which the piers of a bridge are built and the superstructure reared.

COMPRESSION AND DECOMPRESSION.

When men are passing into compressed air for the first time they often experience unpleasant sensations. Many become nervous, and they are conscious of their heart beating a little more quickly. Others, again, experience a considerable amount of discomfort which gradually increases to severe pain in the ears owing to the membranum tympani being forcibly driven inwards. This occurs when there is a deficiency of air in the middle ear either as the result of the Eustachian tube not being patent enough or as a consequence of naso-pharyngeal catarrh. The tympanum has been known to rupture, and as the blood vessels in the middle ear are dilated haemorrhage has occurred, leaving a temporary or permanent injury behind in the organ of hearing. Workmen who are in the habit of passing through the air locks can, by a peculiar method of swallowing, carry air up the Eustachian tube, and by thus equalizing the pressure on either side of the tympanum escape the pain and unpleasant sensations which are experienced by the men who are new to the work. In my experiments upon animals, although most of them seemed to bear rapid compression quite well and to be uninfluenced by it, others would fall upon their side and become convulsed—symptoms which disappeared as the pressure went on rising, and from which they entirely recovered by remaining in the compressed air. Since it is the men who are about to work in compressed air for the first time who are most likely to suffer pain and discomfort in the ears, and there will always be some men who will never be able to bear compressed air well, there ought to be some means inside the air lock whereby those inside can communicate with the man in charge of the pipes outside, so that the pressure may be reduced on the supervention of symptoms, since these may become almost unbearable and if not relieved might lead to serious harm, although in my own experiments animals that were convulsed improved with a rising pressure. It is well to raise the pressure slowly, for by this means the men become accustomed to the changing conditions and they are less likely to suffer in the manner indicated.

When the pressure inside the air lock has come to equal that inside the cylinder the inner door is pushed open, and the men pass into the caisson and descend the ladder to the bottom of the shaft. Here they work for a few hours. Since it is necessary that the air inside the caisson shall be kept as pure as possible, an excess of air must be pumped in, and care must be taken that it is not fouled by the products of combustion of naked lights. The electric light is preferable to lamps and candles. The surplus of air escapes by the free edges of the caisson. Free ventilation keeps the air in the interior of the caisson cool. As there is a danger of the air coming from the compressor engine becoming too hot, the cylinder should be covered by a water jacket in which cold water is kept circulating. It is most unusual for men to become ill when working inside a caisson; most fortunately, too, very few accidents occur inside.

After three or four hours' work the men leave the caisson, and in passing out through the air lock they undergo what is called "decompression." It is occasionally during, but mostly after, decompression that symptoms of compressed-air illness show themselves. Having entered the air lock and closed behind them the door leading into the caisson, the pressure in the air lock is for a brief period the same as that under which they have been working; but, by opening a valve on the outside of the air lock, the man in charge allows air to escape into the external atmosphere, and, when the pressure inside the air lock has come to equal that of the external air, the door can readily be opened, and the men emerge enveloped in a thick cloud of white mist.

LENGTH OF SHIFT.

The length of time spent by the men in the working chamber should be inversely proportional to the pressure. As excavation of the bed of a river proceeds and the caisson sinks, the pressure inside has to be correspondingly raised, and the duration of the working period neces

sarily shortened. At King Edward VII Bridge there were two shifts—one for the day and another for the night. When the pressure was 25 lb. the men worked ten and a quarter hours, namely:

6 a.m. to 8.30 a.m.	2½ hours
9.15 a.m. to 1 p.m.	3¾ ,,
2 p.m. to 6 p.m.	4 ,,
	10¼ ,,

But as the caisson sank and the pressure rose to 35 lb. the number of hours worked a day was shortened. Four hours was the longest time spent in a caisson, and the greatest depth attained was 70 ft. below high-water level mark. On tidal rivers the pressure keeps rising and falling with the tide. In some of the American tunnels the men were allowed to work only one hour at a stretch when the pressure was 50 lb. In Amsterdam I found the men working at a depth of 66 ft. below the surface, and under a pressure of 30 lb. These men worked four hours at a stretch, came out for eight hours, and returned to work for another four hours, making an eight-hour day. Although in Holland the intervals between the shifts were unusually long compared with those on the river Tyne, there were just as many cases of the minor forms of compressed-air illness among the Dutchmen as among the men on the Tyne.

Although one of my patients became ill in the air lock when undergoing decompression, it is generally after the men come out of the air lock that symptoms develop. As a rule the men come out feeling quite well. It may be before they leave the works, when they are proceeding homewards, have reached home and gone to bed, or are partaking of a meal, that the men all at once complain of severe pains in their limbs or abdomen. Some are sick and vomit, others become dizzy and in trying to walk fall owing to sudden loss of power in their lower extremities; others, again, have a bleeding from the nose or mouth, or are the subjects of a degree of nervousness often amounting to terror. In the worst forms there is unconsciousness.

Occasionally the symptoms resemble hysteria, or there is intense excitement, which goes on to frenzy. The most common symptoms are muscular pains, known as "bends," or there is loss of power in the lower extremities, attended by retention of urine, and requiring the use of the catheter. Fortunately in most instances the paralysis of the limbs passes away in a few days, but occasionally it lasts for months, with all the physical signs of a limited myelitis. In one of my own cases the paralysis, which was accompanied by loss of sensation, became permanent, bedsores formed, and the patient succumbed to septicaemia and tuberculosis.

Cause of the Symptoms.

Men inside a caisson are working under abnormal conditions. They are under a higher atmospheric pressure than when at the surface. The work, too, is hard, since it is all manual labour, hence the necessity of pumping into the caisson a superabundance of air drawn from an uncontaminated source. Although the air supplied may be pure, it may become fouled inside the caisson by gases evolved from the strata during the process of excavation. It was when passing through a thin stratum of soft, mushy coal on the river Tyne that unpleasant odours were complained of by the men, and several of them became ill. At this particular time the men were not working under high atmospheric pressure, so that probably the air had become impure by H_2S or CO, and this circumstance contributed to their becoming ill. High pressure, while an important factor in caisson disease, is not the only factor. At Greenwich, for example, out of 9 cases of compressed-air illness, 3 occurred in men who were working in a pressure of only 12 lb., and at the Blackwall Tunnel men also became ill under remarkably low pressures. The worst and only fatal case which I had was that of a man who had been in a pressure of 25 lb. for four and a half hours, and who was decompressed in three minutes. The length of exposure to the pressure and the purity of the air breathed have to be considered as well as the amount of pressure. Although opinions differ, yet the influence of the purity of the air breathed cannot be altogether ignored when viewed in the light of Snell's experience at the Blackwall Tunnel. When the amount of air supplied was 4,000 cub. ft. per man per hour, there were 28 cases of compressed-air illness in 100 days, but when 12,000 cub. ft. of air were supplied the cases fell to zero. Copperthwaite maintains that the number of cases of compressed-air illness is proportional to the amount of carbonic acid in the air breathed, and that when the CO_2 reaches 1 per cent. illness may be expected. Although the greater the amount of air supplied per man the less likely it is to contain impurities, yet at the Brooklyn Bridge, New York, while 1,400 cub. ft. were supplied per man per hour, the air in the caissons frequently contained 0.3 per cent. of CO_2. On the river Tyne 1,320 cub. ft. of air were supplied, and the average amount of CO_2 present was 0.2 per cent.

The larger the number of men working in a caisson the greater should be the amount of air introduced in a given time. Now and again it happens that a caisson suddenly sinks on to a clay bed and the surplus air can no longer escape as heretofore by the free edge of the caisson. As air under compression is still being pumped into the caisson, this chamber would probably rupture were it not for the fact that both at the upper part of the shaft and on the compressor engine itself there are safety valves which act automatically when the pressure inside the caisson reaches a little higher than the maximum pressure the men have been working at on any particular day. In tunnelling operations, where the line of procedure is not vertical but horizontal, when gravel is reached there is often a very free escape of air, so that in order to keep up the pressure enormous quantities of air have to be pumped in—say 4,000 to 8,000 cub. ft. per hour—a large amount compared with the 1,320 on the river Tyne, but yet small when compared with 13,000 cub. ft. occasionally required at the Baker Street and Waterloo Tunnel. At the Baker Street Tunnel sometimes the amounts of air sent in were 1,300 and 2,000 cub. ft., and it is interesting to know that when the freest ventilation prevailed there were only eight cases of compressed-air illness in one month, and when the worst conditions prevailed there were thirteen cases in twelve days. In passing through the clay soil the amount of CO_2 in the London tunnels frequently rose to 0.1 per cent., whereas with a gravel face the percentage varied between 0.05 and 0.07. In making the Hudson Tunnel, New York, the CO_2 occasionally rose to 2 per cent., or 20 parts per 1,000 of air, and the men died at the rate of 25 per cent. per annum. Although at first sight it would appear as if at the Hudson Tunnel the large percentage of illness was due to the amount of CO_2 present in the air, yet it cannot be said that CO_2 is the cause of compressed-air illness, since in London it was found that it was not when the men were working at a clay face and the percentage of CO_2 highest that the amount of sickness was always greatest; nor on the river Tyne did there appear to be any close relation between the amount of sickness and CO_2 in the air.

In all industrial occupations experience has shown that the freer the air is from CO_2 the larger is the amount of work done by the men and the less is their sense of fatigue. Opinions differ as to the harmful effects of this gas upon workmen. At the Brooklyn Bridge the men suffered when the CO_2 in the air reached 0.3 per cent., and Copperthwaite tells us that when the CO_2 rises to 1 per cent. illness may be expected. Owing to the comparatively small size of my compressed-air chamber I have not had the opportunity of trying experiments upon animals larger than dogs. I have, however, been struck by the results obtained when mice, rats, and dogs have been exposed to varying percentages of carbonic acid and carbon monoxide. According to Copperthwaite, 1 per cent. of CO_2 is regarded as dangerous, and yet I have exposed a dog for two hours under a pressure of 25 lb. in an atmosphere containing 3.4 per cent. of CO_2 and 0.6 per cent. of CO and decompressed the animal in thirty-five seconds without the slightest harm resulting; also to 3 per cent. of CO_2 for two hours and decompressed in twenty-five seconds, and yet the animal suffered no inconvenience. The same dog was in compressed air containing 2.26 per cent. of CO_2 for seven hours and under 50 lb. pressure, and developed no symptoms after decompression, while a rat, after exposure to 0.62 per cent. of CO_2 atmosphere for seven hours under 50 lb. pressure and gradually decompressed, was found dead on the following day.

Carbon monoxide is a deadly poison, and yet by degrees animals seem to become acclimatized to it. I got a dog to

become capable of breathing under 50 lb. pressure an atmosphere containing 0.3, 0.4, 0.57, 0.8, 0.95, and 1.6 percentages of CO for from eight hours with the smaller quantities to two hours with the larger percentages, and to be decompressed in the last instance in three-quarters of a minute without suffering. The question of the acclimatization of man and animals to CO is very important from the point of view of the work of the coal miner and rescue work after colliery explosions.

Sulphuretted hydrogen is also a very poisonous gas, but I found that traces could be borne for four hours—for example, 0.005 per cent. for one hour, 0.019, and 0.02 also for one hour without any mishap, but that 0.2 per cent. was fatal.*

Without oxygen mammalian life cannot be maintained, and yet under certain circumstances oxygen is a poison. The exposure of animals to high atmospheric pressures of oxygen is dangerous. In exposing mice to 10 atmospheres of oxygen the breathing after a short time becomes rapid, the animals become comatose, and they die in convulsions before decompression is effected. Now, since animals exposed to the same pressure of ordinary atmospheric air did not exhibit in the caisson any symptoms at all, the presumption naturally is that the oxygen acted as a poison. Exposures of animals to high pressures of ordinary atmospheric air and to oxygen are therefore not the same. Oxygen is a protoplasmic poison; it lessens respiratory exchange and induces convulsions. Professor Lorrain Smith of Manchester University found that "exposure of animals to a tension of 170 to 180 per cent. atmosphere of oxygen causes in a short time diminution in the power of the lungs to absorb oxygen actively, and that with a continuance of the exposure the arterial oxygen falls till it reaches the level for which mere diffusion of oxygen from the alveolar air might account." This effect is largely due to the fact that oxygen has an irritating effect upon the lungs, and produces first congestion of these organs, and subsequently haemorrhagic consolidation of them. The lungs become hepatized as in pneumonia. Finding that very high pressures of oxygen atmospheres caused death by inducing pneumonia, Lorrain Smith is of the opinion that inflammation of the lungs is a cause of caisson disease; but, as we have already seen, this can scarcely be the cause, for the symptoms of compressed-air illness are not on the side of the respiratory organs, but in the neuro-muscular system.

PHYSIOLOGY OF CAISSON WORK.

When a gas and a liquid are brought into contact with each other the liquid takes up the gas in solution, and this absorption will continue until the liquid saturated with gas ceases to take up more. No chemical compound is necessarily formed as a consequence of this union. The amount of gas in solution depends upon the solubility of the gas, the temperature of the liquid, and the amount of pressure. The amount absorbed varies directly with the pressure in accordance with Dalton's law. When men are working in compressed air their blood will take up a larger amount of nitrogen and of oxygen in simple solution than at atmospheric pressure. Since the oxygen of the inspired air mostly enters into loose chemical combination with the haemoglobin of the blood corpuscles there will be only a small amount of oxygen taken up by the liquid part of the blood, and what is taken up will probably quickly disappear in the tissues. The amount of carbonic acid normally present in the alveolar air of the lungs at ordinary pressure is about 5.6 per cent. Dr. John Haldane, whose work on this subject is of the greatest value, maintains that in a caisson the "compressed air makes no difference as regards the solution of CO_2 in the blood, since, unless the air breathed is foul, the presence of CO_2 in the lung air is kept constant by the breathing, whatever the total atmospheric pressure may be"—that is to say, that any slight excess of CO_2 will stimulate the respiratory centre, quicken and deepen the breathing, and thus get rid of the excess of CO_2. Experience, on the other hand, shows us that asphyxia by CO_2 does occur, either by accumulation of CO_2 in the blood or through a deficiency of oxygen. It is different with nitrogen, which forms 79 per cent. of ordinary atmospheric air. This gas does not enter into chemical combination with the blood. In compressed air larger quantities are taken up by the liquor sanguinis; and, as the nitrogen-saturated blood circulates through the body, the tissues in time also become saturated with the gas. Each time the right ventricle contracts, the blood which is sent to the lungs becomes saturated to the same pressure of nitrogen as that of the nitrogen in the alveolar air. The arterial blood will part with this nitrogen to the tissues, so that the venous blood returning to the right side of the heart will contain less nitrogen, and be again ready to take up more gas in passing through the lungs, but the amount of nitrogen taken up will gradually get less and less with each systole as saturation takes place and the pressure of nitrogen in the blood and tissues becomes equal to that in the alveolar air.

Haldane has given a vivid description of the saturation of the blood and tissues by nitrogen. The gas in solution in the blood exerts the same pressure as that exerted by the gas in contact with the blood; and when the external pressure falls, as during and after the decompression of a workman in the air lock, the gas in solution again assumes the gaseous state, and appears in the form of bubbles in the blood and tissues. The parts of the body which have a rapid circulation become more rapidly saturated than those with a feeble circulation, and as they become more quickly saturated they will also the more quickly desaturate. It has been known for long that stout men do not bear work in compressed air well. The explanation is apparent. Mr. Ramsbottom—my former colleague in the physiological laboratory—and myself found that fat absorbed under pressure a large quantity of air. The fat of the human body is capable of obtaining a much larger quantity of nitrogen than blood, hence the rôle attributed to obesity in the compressed-air illness of caissoniers. Even admitting this, there is probably involved in the circumstance more than the question of fat.

At King Edward VII Bridge the men worked in pressures up to 35 lb., but in some places work has been done in 67 lb. pressure, equivalent to 4.45 atmospheres. Experimentally higher pressures have been borne. Leonard Hill exposed himself to a pressure of 75 lb., and Greenwood to 92 lb. Greenwood was in the compressed-air chamber for fifty-four minutes, and although two hours seventeen minutes were spent in decompression he experienced severe pains twenty minutes after leaving the compressed-air chamber. Paul Bert exposed dogs to 10 atmospheres of ordinary air for a lengthened period and decompressed them slowly without any bad effects.

In the discussion which followed the reading of my paper on the Use of Caissons in Bridge Building, at the Society of Arts, May 11th, 1906, Mr. E. W. Moir, of Messrs. Pearson and Son, contractors for the Admiralty Pier at Dover, the Hudson Tunnel, New York, and other large engineering undertakings, gave interesting data in regard to the length of time animals could remain under high pressure without any bad effects. At the old Hudson Tunnel the mules remained underground under pressure for twelve months. All that time they appeared to be quite comfortable; they were frisky, and they worked eight-hour shifts. After being in compressed air for over a year, the contractors, wishing to bring them to the surface, gave each of the mules a bottle of whisky and applied mustard jackets over such parts of their bodies as they thought might possibly become affected. The mules were brought out very slowly, half a day being spent in decompression. The animals were no worse for their long immersion, for when sold they realized excellent prices.

PATHOLOGY OF CAISSON DISEASE.

Two years ago Dr. Parkin, Assistant Physician Royal Victoria Infirmary, and myself carried out a series of experiments upon pithed frogs in compressed air. I gladly take this opportunity of publicly expressing to Dr. Parkin my sense of indebtedness for the generous help he then rendered me, and of the assistance I have received from his thesis on Compressed Air. We subjected frogs to extremely high pressures, and after a time suddenly decompressed some of them. The web of a frog's foot was drawn over the inside of the glass window of the compressed-air chamber, and by means of the microscope and electric light illumination we could watch the circulation of the blood in the frog's capillaries. During compression the circulation proceeded

* For assistance in the gas analyses I am indebted to my colleague in the Physiological Laboratory, Mr. Frank Howson, M.A.

quite naturally, but after sudden decompression, while the circulation seemed to go on apparently unchanged, by degrees the rate of the blood flow diminished, and gradually ceased, preceded by a slight to-and-fro movement. All at once a bubble or two of air would appear in the capillaries, and these running together formed a large embolus inside the vessel. Occasionally air bubbles appeared in the tissues external to the blood vessels, and were due sometimes to rupture of the capillaries or to desaturation of the tissues. It is the presence of gaseous emboli in blood vessels, the accompanying stagnation of the circulation, and the occasional rupture of small blood vessels with haemorrhage which are the pathological lesions present in most cases of compressed-air illness. It is the bubbles of nitrogen gas in the small blood vessels of the brain and medulla and the presence of air spaces in the cerebral tissue which explain the sudden death of divers and caisson workers after decompression; also the presence of similar lesions in the lower part of the spinal cord which explains the paralysis of the lower limbs, and when present in the muscles and around the joints, the severe pains known as "bends." In opening the bodies of frogs, mice, and rats which had died shortly after decompression, bubbles of air can be seen escaping from the heart when that organ is cut into, also from the liver and the subcutaneous tissues. The bubbling of gas in the blood and tissues of the body after sudden decompression is aptly compared with the effervescence which occurs in a bottle of soda water on removal of the cork, and, in a word, is the pathology of caisson disease.

Apart from the dangers incidental to rapid decompression, caisson workers are exposed to other risks—for example, (*a*) accidents occurring inside the caisson during the ordinary work therein; fortunately such accidents are extremely rare; (*b*) the breathing of an atmosphere polluted by CO_2, CO or H_2S; (*c*) sudden inrush of water into a caisson, owing to an untimely manipulation of the doors of the locks; and (*d*) sudden rupture of a caisson.

The first two of these risks have been already dealt with, but the possibility of a sudden inrush of water calls for a few remarks. During the building of a pier at Havre in September, 1905, one door leading into a caisson was opened at the wrong time. As a result of the sudden fall of pressure, water rushed into the caisson and drowned one of the workmen. The other men only escaped with difficulty. The possibility of an accident such as this can only be obviated by having competent and reliable men in charge of the locks.

Another danger is sudden rupture or explosion of a caisson. This occurred a few months ago at Hebburn, where, after the men had been working for nearly two hours in a pressure of 30 lb., the caisson suddenly burst. The four men inside were immediately decompressed; one man who was at the bottom of the shaft was killed by falling timber, broken iron plates and débris, but the other three, although injured about the head and limbs, in no way suffered as a consequence of the immediate decompression. The accident occurred about the breakfast hour. In conjunction with Dr. Maclay, of Wallsend, I visited the scene of the explosion in the afternoon. On the following day, along with Dr. Inglis, of Hebburn, I visited the injured men in the Hebburn Infirmary, but although all were bruised, as the result of the physical injuries they received, not one of the men, either then or subsequently, was anything the worse for the instantaneous decompression. It might be argued that the length of time spent by the men that morning in the caisson was too short for a considerable amount of gas to have passed into solution in their tissues; but although the figures given are approximate, Haldane states that in one hour the various parts of the body became saturated with nitrogen to the extent of 70 per cent., and in two hours to 92 per cent. The fact remains that three men were instantaneously decompressed, and not one of them developed symptoms of compressed-air illness. It is difficult to say why no serious symptoms followed.

Prevention.

Believing that the cause of caisson disease is the liberation of bubbles of gas in the blood vessels and in the tissues, and that slow decompression by giving time allows the dissolved nitrogen to gradually escape through the vessels of the lungs into the alveolar air, physiologists have recommended that decompression should be slowly performed; also that the time spent in the act should be directly proportional to the amount of pressure and the length of exposure to it. Compression also should not be quickly hurried over. One minute for every 5 lb. of pressure, or three minutes for each atmosphere, formed the minimum time spent in the air locks at the King Edward VII Bridge for decompression—a short time compared with the forty minutes required of the workmen in Amsterdam exposed to only 2 atmospheres of pressure. Hill and Macleod recommend when men have been exposed to 2 atmospheres, or 30 lb. pressure, thirty minutes to one hour to be spent in decompression, and for 3 to 4 atmospheres—that is, 45 to 60 lb. pressure—one to two hours for decompression. My feeling is that it would be almost impossible to get the British workman to submit to spending this length of time in decompression, and no wonder, for during decompression the temperature inside the air lock falls several degrees, and the men, perspiring and fatigued with their work, are apt to become chilled unless they have been supplied with blanket rugs. Besides, it is well known that the workmen prefer to run all sorts of risks than endure the ennui of slow decompression. Some boast of having come regularly out of the caisson through the mud lock, quickly decompressed, without experiencing the slightest inconvenience, but this circumstance must not be taken as a recommendation for the adoption of a procedure which both experience and experiment show to be extremely dangerous.

The irksomeness of slow decompression can, to some extent, be overcome by "stage" decompression on the lines indicated by Haldane. He recommends as being within the limits of safety rapid decompression from a high to a moderate pressure, and this to be followed by slow decompression for the remainder of the pressure. It is possible to decompress from 6 to 3 atmospheres, from 4 to 2 atmospheres, or from 2 to 1 suddenly, and then to decompress slowly during the remainder. "The danger of rapid decompression," Haldane says, "depends not on the absolute difference between the initial and final pressures but on the proportion between the two pressures. If this proportion is only 2 or 2.3 to 1 the decompression is safe; if, on the other hand, the proportion is 3 or 4 to 1 the decompression is dangerous." It is towards the end and not in the early stages of decompression that the danger reaches its maximum, hence the pressure may be suddenly reduced one-half provided the remainder of the decompression is slow. This method of decompression would certainly expedite the transmission of the men through the air lock and would shorten the time spent in decompression.

If there is one occupation which should be followed only by comparatively young men, and one in regard to which previous medical examination of the workman is necessary, it is work in compressed air. In medicine it frequently happens that experience is in advance of explanation. It has been known that the men who suffer least are those who are aged between 20 and 30 years of age, who are temperate and of spare build, and whose tissues are still elastic. Stout, flabby men do not bear caisson work well, the reason being, as Vernon found, that fat not only takes up six times more nitrogen than most of the other tissues and fluids of the body, but it saturates and desaturates more slowly. As already stated, it remains to be shown that slow desaturation is a disadvantage.

Treatment.

Since compressed-air illness is due to the presence of bubbles of air in the blood and tissues, both Mr. W. E. Moir of Messrs. Pearson and Son, and Dr. Andrew Smith of New York suggested that on the appearance of symptoms the workman should be placed in an air lock and again compressed. It has been shown experimentally that during recompression the bubbles of air disappear, and that if the second decompression be slowly effected the symptoms may not reappear. Recompression most certainly gives rapid relief to the "bends" or muscular pains complained of by the men. There should be no large working in compressed air undertaken without there being close at hand a medical air lock large enough for one or two men to lie down in, suitably heated and lighted. I can bear testimony to the efficacy of recompression even in cases where minor degrees of muscular paralysis had appeared. At the Hudson Tunnel it was found that, after the introduction of

the recompression chamber, the death rate among the workmen fell from 25 to 1½ per cent. per annum. To get the best results the men should be placed in the immersion chamber as early as possible after the development of symptoms. In many instances symptoms do not recur after recompression; in other instances relief may or may not be obtained. The following is an interesting experience of recompression given to me by a patient under my care in the Royal Victoria Infirmary:

On August 6th, 1908, a sinker, aged 25, went to work at 6 a.m., and remained under 30 lb. pressure until 9 a.m. After coming out of the air lock he felt pains in his back and fainted; he was carried into the medical lock and recompressed in a pressure of 20 lb. At 10 a.m. he had recovered, and preferred to go back to work in the caisson, where he remained until 1 p.m., feeling quite well and doing his work as well as the other men. He had hardly left the air lock a second time when he was seized with pains in his arms and elbows, and was placed in the recompression chamber. After being there for half an hour and feeling relieved, the pressure was lowered to 24 lb., but as the pains returned the pressure was again raised, and he remained in the chamber until 6.15 p.m., when he came out free from pain. He left the works and was proceeding homewards, when he was seized with pains in the right arm; but he went home, had tea, went out for a short walk, and afterwards went to bed. The pains by this time had become so severe that he could not sleep. He got up, and going back to the works he re-entered the medical lock at 10 p.m., where he stayed until 5 a.m. on August 7th. He slept for four hours in the medical lock, and on coming out was all right, but severe pains developing in his knees he again entered the medical lock at 5.45 a.m. and stayed there until 8.45 a.m. in a pressure of 26 lb. Shortly after leaving the recompression chamber the pains returned, and as these were severe Dr. Maclay gave him a hypodermic injection of morphine and sent him into the Newcastle Infirmary. The patient, who was a well-developed man, had previously worked under 25 lb. pressures in Dublin for six months, and in Glasgow for four months under lower pressures, without suffering. When admitted into the infirmary he was still in such pain in the knees and elbows that he had to have another injection of morphine. There could be felt distinct creaking in the skin over the left knee as in emphysema. By degrees the pains lessened and ultimately disappeared. The temperatures for the three evenings after his admission were 100°, 100.4°, and 99.80° F. The sounds of the heart, which were normal, were distant and not at all easily heard.

When recompression cannot be carried out, as, for example, when the symptoms come on long after a man has left the works, he should be put to bed, kept warm, and if in great pain a hypodermic injection of morphine may be administered. In many of these cases, even although there is no paralysis of the limbs, there is frequently a paralytic condition of the bladder attended by retention of urine, and calling for the use of the catheter. Muscular paralysis, loss of sensation, bedsores, and complications must be treated on ordinary lines.

Since the risks to life from rupture of a caisson are enormous, the greatest care should be taken to prevent such an accident. Whether the shifting of the surface of the river's bank towards the Tyne at Hebburn on account of the excessive dredging of the river so pressed upon the caisson and cracked it, or whether there had occurred a sudden lowering of pressure followed by a jerk of the caisson which broke its attachments, it is difficult to say, but engineers are agreed that caissons should be made of strong steel or of wrought-iron plates, and not of cast iron, and that these chambers should be made of such strength as to bear two or three times greater pressure than is ever likely to be required of them.

THE Belgian Minister for the Colonies has ordered the establishment in the Congo territory of six new lazarettos for patients suffering from sleeping sickness. The lazarettos will be under the charge of Belgian doctors.

THE Local Government Board in England has issued to port sanitary authorities, and certain other sanitary authorities, a circular (Foreign Meat, No. 3), stating that there has been published in the *London Gazette* of January 22nd a notice containing a schedule of labels and marks declared to be admissible as official certificates in respect of foreign meat which consists of pork, or other edible parts of the pig, which has been subjected to inspection in Denmark, the Netherlands, the Dominion of Canada, and the Dominion of New Zealand. Attached to the circular are facsimiles of the marks. The fact that such a label is attached to the carcasses of pigs or any other kind of imported pork does not exempt the meat from liability to examination.

A Lecture

ON THE

USES OF THE CALCIUM SALTS IN VARIOUS MORBID CONDITIONS.

DELIVERED AT THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, NOVEMBER, 1908,

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IN 1898 Sir Almroth Wright pointed out that conditions of deficient blood coagulability do not always manifest themselves in a tendency to actual haemorrhages, but also manifest themselves in a tendency to increased transudation of plasma through the capillary wall—that is, in a tendency to "serous haemorrhages." He pointed out that this condition of serous haemorrhage can to a large extent be controlled by increasing the coagulability of the blood by the administration of a calcium salt. Examples of such serous haemorrhages are urticaria, chilblains, oedema of the feet and hands not due to heart disease, kidney disease, or venous obstruction, and a certain form of headache known as the "lymphatic type of headache." Chilblains are always associated with a condition of defective blood coagulability, and the condition is also fairly frequently associated with the liability to attacks of urticaria and epistaxis.

LYMPHATIC TYPE OF HEADACHE.

This type occurs more frequently in women than in men, and generally manifests itself as a dull heavy ache in the frontal region, or occasionally as a throbbing pain in the frontal and temporal regions. In a few cases it may occur in any part of the head. It is generally experienced on waking in the morning, and usually diminishes in intensity or disappears after a few hours. It is most intractable to the ordinary methods of treatment for headache, and may persist for years unless the association of it with a lowered coagulability of the blood is recognized and suitable treatment for that condition employed. The subjects of this form of headache are usually of the lymphatic type, with a tendency to slight oedema of the face, eyelids, hands, and feet. There is generally some anaemia and a varying amount of lassitude, both physical and mental.

G. W. Ross was, I believe, the first to suggest that serous haemorrhage might be the basis of these headaches, and he demonstrated that in 10 cases of lymphatic headache which were definitely shown to have a lowered coagulability of the blood, the administration of a calcium salt was in every case followed by the exaltation of the coagulability of the blood, and concomitantly with or closely following upon this alteration in the blood the headaches were relieved. He also showed that decalcification of the blood by the administration of potassium citrate, with the consequent diminution of the coagulability of the blood, caused a reappearance of the headaches.

During the past nine years I have treated a large number of cases of deficient blood coagulability in both private and hospital practice, with remarkably successful results in the majority of cases. I propose in this communication only to deal with those cases (121 in all) in which I am able to record the results of the treatment after the lapse of prolonged periods from the initial course of treatment. In no single case amongst those recorded in this paper has this period of observation been less than one year, and in several of them it has extended over from one to eight years. The results, therefore, show whether the improvement is a lasting one or not.

With the exception of the 5 cases of aneurysm, which were treated in hospital practice, all the cases were treated in private practice, as I found that in such cases I was better able to follow up the results of the treatment, either from the patients themselves or from their medical attendants, than in the cases of hospital patients. In several of the cases the diminished coagulability of the

blood was experimentally determined before the commencement of treatment; in others it was inferred from the symptoms and history.

Method of Treatment.

The calcium salt that I have used in all the cases was calcium lactate, as that salt possesses many advantages over calcium chloride. Caldium lactate has scarcely any taste, and is practically devoid of irritant properties, whereas calcium chloride is an irritant to the stomach, and possesses a most unpleasant taste. The lactate is sufficiently soluble in water (1 in 15), and the organic lactic acid moiety of the salt is readily oxidized in the system, with the result that the base is placed more fully at the disposal of the organism than in the case of the mineral acid salt. In other words, calcium lactate is more readily absorbed into the blood than is calcium chloride. It is important that the lactate should be fresh as it decomposes after long keeping. The indication of its freshness is that it should form a clear solution in water, or at least that the solution should only be faintly turbid. Any definite white precipitate in its solution is an indication that the salt has undergone some change, and that therefore in that state it should not be employed.

For adults the dose given in all the cases was 15 grains of the calcium lactate dissolved in a fluid ounce of chloroform water, with the addition of a half to one minim of tincture of capsicum. This dose was always ordered to be taken three times a day, and one hour before meals. I consider that the administration of the medicine about one hour before meals is an important point, as it allows absorption of the salt to take place prior to the introduction of food into the stomach, and so the precipitation of the calcium by the phosphates and possibly other constituents of the food is prevented. The calcium lactate was in all the cases given over a period of six weeks. Constipation is a common accompaniment of the administration of the calcium salt, and must be controlled. For this purpose it is not desirable to give saline purgatives, owing to their precipitant action on calcium salts. The laxative that I have found most useful in such cases is an infusion of senna pods, which should be taken at bedtime.

In a small proportion of the cases described as cured a few slight relapses occurred, generally some months after the course of treatment, but these were in all cases speedily relieved by the readministration of the calcium lactate for a short period (generally from one to two weeks).

The Various Conditions treated and the Results of the Treatment.

Headache.—These cases were all of the lymphatic type, and were associated with slight oedema of the feet and hands, and generally of the face and eyelids. The records of 45 cases are known. Of these, 37 (82 per cent.) were cured, 2 were considerably benefited, 2 were slightly benefited, and in 4 cases (9 per cent.) no good resulted. The headache was generally relieved in from one to three days. These headaches were always associated with lassitude, and in all the cases successfully treated there was a remarkable improvement in physical and mental tone. In cases of headaches not of the lymphatic type the treatment with calcium lactate is not of the slightest use.

Chilblains.—All the cases were associated with cold hands and feet, and with some oedema of the hands and feet, which was generally slight in amount. The records of 37 cases are known. Of these, 29 (78 per cent.) were cured, 1 was considerably benefited, 3 were slightly benefited, and in 4 cases (11 per cent.) no good resulted. In several of the cases recorded as cured slight relapses occurred, generally in the following winter, but they all rapidly responded to another course of treatment with calcium lactate of usually two to four weeks' duration.

Boils.—All the cases were associated with cold hands and feet, and with slight oedema of the hands and feet. The records of 8 cases are known. All were cured, and up to the present time no relapses have occurred.

Urticaria.—Seven cases of severe urticaria associated with coldness of the extremities and oedema of the hands and feet were treated. None of them were cases of urticaria due to food. Six were cured, and in one case no good resulted.

Flushing of the Face.—These cases were associated with coldness of the extremities, and generally with cardiac palpitation. The records of 6 cases are known. Four were cured, and in 2 cases no good resulted.

Aneurysm.—Five cases of aneurysm of the arch of the aorta occurring in hospital patients were treated with calcium lactate. Considerable benefit resulted in every case. The drug appeared to encourage the deposition of fibrin within the aneurysmal sac, with recession of the swelling, more rapidly than any other drug I have tried. Two of the patients had previously been in hospital under me for the treatment of their aneurysms, and had then been treated with large doses of iodide of potassium, so that I had the opportunity in these two cases of comparing the effects of the two drugs. Beyond all doubt the calcium lactate acted more rapidly and more efficiently than did the potassium iodide, and without the unpleasant effects produced by the large doses of the iodide.

Haemoglobinuria.—The calcium lactate treatment was employed in three cases, with very marked benefit in controlling the condition in all three cases. A brief description of one of the cases will serve as an example: The patient, a male, aged 57, was first seen two years ago with a history of haemoglobinuria extending over the preceding six months. The attacks recurred during that period every one to three days, and the urine during the attacks resembled burgundy or porter in colour. The attacks were associated with flushing of the face, and coldness and slight oedema of the hands and feet. The haemoglobinuria was quickly and completely checked by the administration of calcium lactate. During the two years there have been a few slight returns of the haemoglobinuria, which can be readily controlled by the administration of a few doses of the calcium lactate, without the patient having to give up his work, which he was formerly compelled to do during the attacks.

Oedema of the Feet on Exertion.—Two cases of troublesome oedema of the feet were treated with calcium lactate. The oedema was neither cardiac nor renal in its origin, and was not due to venous obstruction or any ascertainable organic disease. Both patients had been treated for some time without avail with various drugs, massage, baths, electricity, etc. In both cases there was a marked deficiency in the coagulability of the blood, and both were rapidly cured by the administration of calcium lactate.

Vesicular or Bullous Eruptions.—Three cases associated with deficiency in the coagulability of the blood were treated. In two cases the feet were affected, and in the other case the hands. Other remedies had been tried without avail. All three were rapidly cured by the administration of calcium lactate.

Other Conditions.—Of the following affections, erythema, lichen planus, gouty pruritus, pruritus ani, and perspiring hands and feet with offensive perspiration, one case of each was treated, with success in every case. In all five cases other remedies had been tried without avail. Each of the cases was found to be associated with a marked deficiency in the coagulability of the blood, and fairly rapid cures were effected by the administration of calcium lactate.

Summary of Results.

Of the cases detailed in this paper it will be seen that 78 per cent. were cured, 9 per cent. were considerably benefited, and in 13 per cent. of the cases no good resulted from the treatment. In none of the 121 cases referred to were any bad symptoms produced by the administration of the calcium lactate, and amongst a large number of other cases treated with that salt, but not referred to in this paper on account of the inability to follow up the ultimate results of the treatment, in only three cases have any unpleasant symptoms been produced which necessitated the withdrawal of the calcium lactate. In those three cases the symptoms that supervened during the course of treatment certainly pointed to some commencing thrombosis, probably caused by the calcium salt. In one case there was a definite slight attack of venous thrombosis in the right calf; in the second case slight numbness of the arms and legs associated with tingling occurred, and in the third case noises in the ear and deafness were produced. In the three cases the unpleasant symptoms rapidly subsided after ceasing the administration of the calcium salt.

Remarks

ON THE

USE OF ALKALIS IN PRACTICAL MEDICINE.

By EUSTACE SMITH, M.D., F.R.C.P.,

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Of the stock medicines in common use none are prescribed with greater frequency than the alkalis. As remedies for all kinds of dyspeptic troubles, for gout and rheumatism in their many manifestations, for urinary acidity and sandy deposits, and in the child for all forms of catarrhal derangements, we turn at once confidently to the alkaline salts. But valuable as these medicines can be in the treatment of disease they must be used with discretion, for, like other drugs, they are only of service when prescribed for appropriate conditions and on a definite plan. There are plain limits which it is important to recognize within which alone their operation can be expected to be useful, and outside of which their influence is calculated to be rather harmful than a source of benefit.

When taken before meals alkalis have first a local action. They neutralize to some extent the acidity of the gastric and intestinal contents, but are most to be valued for their curative influence upon catarrhal conditions of the mucous membrane. To be serviceable they must be prescribed only in moderate doses, and discontinued as soon as their administration has ceased to be obviously beneficial. In excessive quantity the effect of the remedy upon an empty stomach is to increase the secretion of acid. The stomach at once sets to work to neutralize the alkali, and if called upon day after day to make a similar effort, the continued strain cannot fail to be injurious and must increase the weakness of an already enfeebled organ. If the dose be pushed still further so as to overcome in a great measure the acidity of the gastric secretion, the consequent loss of digestive energy must aggravate the derangement and add to the discomfort which the remedy was intended to allay. When absorbed into the circulation the salts increase the alkalinity of the blood, modify its secretions, and if continued too long become a fruitful source of anaemia and languor. Carried out through the kidneys alkalis reduce or annul the acidity of the urine and are at first beneficial, but in immoderate dose or a too protracted course may give rise to cystitis or even vesical haemorrhage. In some exceptionally susceptible patients an alkali taken several times a day, even in ordinary dose, is capable of producing very undesirable consequences. A girl of 10, lately a patient in a London hospital, was found to suffer from cystitis whenever she began a course of potassium citrate. In this child a dose of 10 grains taken three times a day invariably caused the urine to become opalescent in a few hours and turbid and offensive before the end of the week. Fortunately such susceptibility is not common. It must, however, always be remembered, when prescribing alkalis with the object of influencing the renal secretion, that we may reduce the acidity of the urine without necessarily modifying the faulty condition of the system upon which the excess of acid depends.

Alkalis have a local action both upon the stomach and bowels. In catarrh of the stomach their influence for good is very decided; but this appears to be due not so much to their chemical action upon the gastric contents as to their undoubted influence in restoring the deranged mucous membrane to a normal condition. In certain morbid states of the stomach the secretion of gastric juice is exaggerated. This may be the consequence of mild irritation of the gastric mucous membrane, or of mental emotion, or a too sedentary occupation combined with insufficient exercise. The patients suffer greatly from weight or discomfort at the epigastrium and complain of sour eructations and often of vomiting. The power of alkalis to neutralize in any material degree this excessive secretion has been called in question by many notable observers—Trousseau amongst others—and the relief which these remedies undoubtedly bring is due probably to their local action upon the walls of the stomach. The effect of alkalis is not, however, limited to this local action, for, when used with judgement, they seem to have the power of influencing the whole system for good and setting up a favourable change, which is not always a merely transitory improvement. We often have occasion to notice the prolonged benefit which follows a course of alkaline waters at one of the many spas both at home and abroad. Acting in this manner, the salts of the alkalis are not so much antacids as alteratives—that is, drugs which, given in modest dose for a period of weeks or months, are able, without producing any immediate or striking change, to correct a morbid condition of an organ or of the whole system, and set up an improvement which, if not permanent, is slow to pass away. But it must be kept in mind that to achieve this result the dose of the alkali must be studiously moderate. It is judicious, when using it thus for its more distant effects, whether upon the urine or elsewhere, to employ the citrate or acetate, for these salts, not being alkaline until they undergo a chemical change in the blood, do not tax the gastric energies or call upon that organ for an increased effort, to which at the time it may be unequal. Still, even with these remedies we must be careful to use them with judgement. Directly they begin to produce signs of anaemia, or earlier if possible, their use should be abandoned. We do no good in chronic ailments by impoverishing the blood, and whenever we prescribe drugs which may have such an effect it is essential to keep a careful eye upon the patient to see that the limits of safety are not overstepped.

In gastric derangements the bicarbonates of soda and potash are favourite remedies and are probably equally efficacious. They should be given in moderate quantities—10 to 20 grains are usually sufficient (for children 5 grains to 10), and it is well, as it adds to their curative value, to combine in each dose a few grains of sodium chloride. I have also found that the tincture of colchicum seeds, in very small doses (2 or 3 minims), is a useful stomachic which in cases of dyspepsia forms an addition to the draught of no little importance. When an alkali is thus prescribed purely for its local action upon the stomach, it should be taken before food, and it is advisable, at any rate after the first few days, to make up the mixture with a freshly-made bitter infusion instead of with water. If, however, the object of our prescription is merely to correct acidity, it should be taken two hours after food, and the bitter is best omitted, as its presence in the draught was held by Dr. Prout materially to reduce the neutralizing properties of the alkali.

If there be great irritability of the stomach, the alkaline draught should be made effervescing with citric acid added at the time of administration, and in such a case the inclusion in the prescription of a minute quantity of antimonial wine increases the sedative effect of the remedy. Thus, 20 grains of sodium bicarbonate with 5 of sodium chloride and one drop of antimonial wine in a bitter infusion may be made effervescent with 16 grains of citric acid. It is best to use a quantity of acid insufficient completely to neutralize the soda, so as to leave the draught slightly alkaline. It should be taken three times a day or oftener before food.

The caustic alkalis—the liquor potassae and liquor sodae—have a more decided sedative action upon the stomach than the bicarbonates; and the liquor potassae given in ten or fifteen drop doses with a few grains of potassium nitrate in a bitter infusion is a remedy of very definite value. The liquor potassae acts well also in combination with other stomachics. In cases of continued dyspepsia with obstinate constipation, sleeplessness, and abdominal pains, I have often found speedy relief and prolonged improvement to follow a draught containing twenty drops of liq. potassae with 1 oz. each of infusion of rhubarb and the compound infusion of gentian, taken regularly for a week or longer every morning before breakfast.

Long courses of alkalis are rarely of service in the management of ordinary flatulent dyspepsia, for although very useful in the early stages there always comes a time when their continued administration ceases to be beneficial. As has been said, their chief value consists in their power of reducing an acute or subacute catarrh of mucous membrane. When this has been done and the gastric lining is left flabby and relaxed, a different kind of medication is required. In the treatment of dyspepsia alkalis

rarely do good if the urine is habitually alkaline, or neutral, or only very slightly acid; also, when the tongue is of good colour and clean, or pale and flabby, with marks at the sides indented by the teeth, these remedies cease at once to be appropriate. The soda salts can be borne for a longer time than the corresponding salts of potash, for the latter are apt to have a depressing effect upon the heart, and may have to be discontinued for that reason. The same disadvantage is shared by all the potash salts, and whenever full doses of the chlorate have to be continued day after day, as in the treatment of ulcerative stomatitis in the child, sodium chlorate, which can be given in large doses without risk, should always be made use of.

In addition to the salts of potash and soda, the heavy carbonate of magnesia and the carbonate of lime are very useful. The former combined with powdered rhubarb is a familiar remedy in every well-ordered nursery, and is invaluable as a preliminary step in the treatment of stomach derangement in the child. For a mild diarrhoea it is better to combine the rhubarb with a few grains of aromatic chalk; for the latter, while in no way interfering with the aperient properties of the rhubarb, heightens its astringent effects. It may be remarked that a teaspoonful of treacle in the draught effectually disguises the nauseous taste of the remedy, and deprives it of its only disadvantage. For infants the dose may be mixed up into a stiff paste with two or three drops of the same sweetener, and smeared by the nurse's finger upon the back of the child's tongue. Given in this way the remedy is not unwelcome to the patient, and runs little risk of being expectorated.

When our object is to neutralize acid in the caecum, the insoluble alkalis are to be made use of, for these are more likely to pass unaltered through the stomach and reach the lower bowel unchanged. The pains often complained of in the lower part of the bowel, caused by local distension with gas temporarily locked up by spasmodic contractions of the intestine, usually yield quickly to the insoluble magnesian salt. The remedy should be combined with a small dose of codeina ($\frac{1}{6}$ to $\frac{1}{4}$ grain) in a draught made stimulating with compound spirits of ammonia and aromatics. In aperient doses these salts produce more irritation of the bowel than is caused by the soluble sulphates of soda and magnesia, and this effect is found to increase by repetition. Trousseau long ago pointed out that when given on successive days the sulphates each time produced less and less effect, while in the case of the insoluble salts the aperient action was more and more marked with each fresh dose of the medicine, and soon led to the passage of mucus, often blood-stained, and evacuated with painful straining.

In addition to their value in derangements of digestion, alkalis are of especial service in the treatment of urinary acidity and the discharge of sand and gravel. It may be the fact, as has been inferred from experiments, that heightening the alkalescence of the blood does not augment its power of delaying or preventing the formation of gouty deposits, but there is no doubt that increasing the alkalescence of urine has a decided effect in preventing the deposition of uric acid from that secretion into the kidney and bladder. As Sir William Roberts has remarked, "it is chemically impossible for uric acid to be deposited from an alkaline urine," and it is a matter of common observation that a course of alkaline waters, such as that of Vichy, prevents the deposition of sand as long as its use is continued, and, in spite of experimental evidence I may add, seems to exercise a restraining influence upon acid formation for a considerable time afterwards. In an alkaline or weakly acid urine the uric acid is converted into a urate, and remains in solution at the temperature of the body. By such means it seems possible—although this has been denied—that small renal calculi may be reduced in size sufficiently to pass through the ureters and be discharged. To effect such a result, however, a long course of the remedy is required. As already stated, the neutral salts should be used for this purpose, especially the citrate of potash, for these salts may be taken in moderate dose for a long time without disadvantage. A favourite remedy for this condition in gouty persons is the carbonate or citrate of lithia, but this salt must be used with caution. Lithia is an alkali which is capable of exercising a poisonous action if given in large doses, and cannot, therefore, be used as an alkalizer of blood or lymph, as the dose required for such a purpose might have dangerous consequences. It is said also to form an insoluble compound with the triple phosphate of soda and ammonia; and its solvent action upon uric acid, at any rate in the living organism, has been called in question.

The citrate of soda is utilized in the feeding of infants. One of the difficulties met with in fitting an infant with a satisfactory diet is the firm clot formed by the casein of cow's milk in the infant's stomach. This density of clot is explained by Sir A. Wright to be due to a combination of the caseinogen of the milk with calcium salts, and he has recommended the use of soda to replace the calcium in the combination, for the clot thus formed is comparatively loose and easy of digestion. Alkalizing the milk with bicarbonate of soda is an old practice, but it had this disadvantage, that the calcium when displaced was thrown down and lost to the system. By using the citrate of soda the alkali still joins with the caseinogen, displacing the calcium, while the citric acid unites with the latter base, forming a soluble salt which is absorbed into the circulation. The proportion recommended for ordinary use is 1 or 2 grains of the citrate to each ounce of the milk.

The bicarbonate of soda is an alkali which is often taken for a lengthened period in cases of dyspepsia. In a long course of this remedy each dose should be combined with a few grains of sodium chloride, for the latter salt has the property not only of aiding metabolism, but also of increasing the vitality and power of resistance of the red corpuscles. It also counteracts the tendency of the bicarbonate to form uric-acid concretions. But still, even with this safeguard, the protracted use of the carbonated salt is not to be recommended, for such a course must tend to weaken the digestive energy, and lead before long to anaemia and depression. It may, however, be sometimes considered advisable in cases of severe acid dyspepsia to give large doses of bicarbonate of soda for short periods of time on account of the beneficial immediate effects of the remedy. When there is great acidity of stomach towards the end of digestion from acid fermentation of food, 30 or 40 grains, or more, given in one dose about three hours after a meal, will often quickly allay the more distressing symptoms, especially if the draught be made stimulating with compound spirits of ammonia and aromatics. The painful cramps which often afflict the habitual dyspeptic, especially in the night, may be put a stop to by the same remedy taken at bedtime. Much larger doses than these have been recommended by some, and I myself have heard the late Dr. Piorry at the Charité Hospital in Paris recommend 3 to 10 grams (48 to 160 grains) of the bicarbonate to be taken three or four times a day in cases of pyrosis. Such inordinate dosage, however, is quite unnecessary, for this unpleasant symptom is rarely found to resist the action of a few grains (5 to 10) of the compound kino powder given several times a day, as recommended by Sir Thomas Watson. Since the introduction of the salicylate the bicarbonate of soda is now little used in the treatment of acute rheumatism. The two salts are, however, sometimes given together. When the salicylate is prescribed in large doses for the treatment of chorea, the addition of double the quantity of the bicarbonate of soda has been recommended by Dr. D. B. Lees for the purpose of counteracting any depressing effect of the salt, especially the dyspnoea which sometimes follows excessive doses of the drug. The chief objection to this practice is, of course, the profound anaemia which such medication is liable to induce.

In suppression of urine the bicarbonate of soda given in 40-grain or 50-grain doses every four hours will sometimes quickly promote a return of the secretion, especially if the remedy be combined with a drachm of the spirits of nitrous ether; but the suppression of urine which is liable to occur at the end of an attack of enteric fever or scarlatina is most rapidly brought to an end by a copious enema of hot water (100° F.), which the patient should be directed to retain as long as possible.

The alkaline preparations are also useful in cases of acute bronchitis when secretion is viscid and thick and difficult to expel, for the salts of soda and potash have great influence in increasing the fluidity of the mucus and favouring expectoration. The bicarbonate of soda is usually made use of for this purpose, but is inferior in value to liq. potassae, which should always be preferred.

In cases of acute bronchitis with fever, dyspnoea, and failing acidity of urine, Dr. A. Haig recommends bicarbonate of soda to be given in sufficient doses to make the urine alkaline, and states that when this is done the temperature falls, and all the symptoms are quickly relieved. The quantity required is, however, large—20 to 60 grains for a child and 90 to 120 grains for an adult in the twenty-four hours. The remedy must not be given with ammonia, which lessens its neutralizing power, but may be combined with digitalis as a cardiac tonic.

I will not here refer to the action of those special salts of the alkalis—the bromides of sodium, potassium, and ammonium, the lactate, sulphite and hypophosphite of calcium, and other similar combinations whose influence depends not so much upon the base as upon the element with which the base is incorporated—the union creating a new body with very definite therapeutical endowments. These are ordered not for their general action as alkalis but for their specific influence as remedies for the relief of particular complaints. I may, however, refer in conclusion to another use for the bicarbonate of soda which should not be passed over without due recognition. Just as this salt is beneficial in catarrhal conditions of the mucous membrane for its local action, so it is found to have a healing influence when applied to sores and inflamed surfaces of the body as an external application. Alkaline baths are used largely in skin diseases for the relief of irritation; 2 to 10 oz. of the bicarbonate of soda dissolved in an ordinary warm bath has a welcome soothing effect in cases of eczema, psoriasis, urticaria, lichen, and prurigo. The value of the salt as a local application is best seen, however, in the case of ulcerated surfaces and phlegmonous inflammations. A solution of 15 or 20 grains to the ounce of water kept applied to an intractable ulcer will be found to exercise a surprising influence in promoting the healing of the sore. I have seen large superficial ulcers which had resisted all previous measures begin at once to heal under the use of this simple dressing.

In whitlow, after the escape of the pus by incision or otherwise, the bicarbonate of soda solution applied on lint under oiled silk causes the pain and suppuration to disappear with remarkable quickness. It is unnecessary to increase the strength of the solution, for the value of the application does not depend upon any antiseptic action of the salt; indeed, its activity is far greater than that of iodoform or other antiseptic. It is thought that the effect is due to its local influence in raising the alkalinity of the blood, which has been found by Brucker and others to be greatly reduced in cases of febrile reaction set up by bacteriological intoxications. The same treatment is equally useful is cases of burns, scalds, otorrhoea, leucorrhoea, etc., and the value of the solution as a douche to the pharynx in cases of tonsillitis and septic inflammations is recognized by every one. There is one other use for the bicarbonate which should not be omitted: The aching which often comes on suddenly in a decayed tooth from direct irritation of the dental nerve by acid secretions in the mouth can be quickly relieved by washing out the mouth with the solution. The alkali neutralizes the acid and at once puts a stop to the pain.

WE have to congratulate Dr. C. A. Mercier on a somewhat rare honour, the winning of the Swiney Prize. This, so far as the medical profession is concerned, is awarded only once in ten years. The prize itself is a quinquennial award, but goes alternately to members of the legal and medical professions. There is no competition for it, nor do candidates submit their names to the adjudicators. These are the Council of the Society of Arts, and the Royal College of Physicians, who adjudge the prize to whomever in their opinion has made the most valuable contribution to jurisprudence, either medical or legal, during the previous ten years. The prize, which is a sum of 100 guineas and a cup of the same value, was established in 1844 by the late Dr. Swiney, who died in that year, bequeathing £5,000 to the Society of Arts for the purpose indicated. The cup stands about 24 in. high, and is an exceedingly fine piece of silversmith work, the design from which it is quinquennially reproduced having been prepared by the late Mr. David Maclise, R.A. The work of Dr. Mercier, which the adjudicators seem to have had specially in view, was his book entitled *Criminal Responsibility*.

An Address

ON THE

REMEDIAL USE OF ALCOHOL.

DELIVERED BEFORE THE BORDER COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION,

BY JAMES MACDONALD, M.A., M.D.,

CARLISLE; PRESIDENT OF THE BRANCH.

IN bringing the subject of alcohol as a remedial agent before your notice a few introductory words of explanation may be offered as to the reasons which have induced me to select this topic for my Presidential address. For the literature with regard to it is generous in quantity; the theme has been worn threadbare by much previous discussion. It is hardly necessary for me to point out to you that for many years alcohol has occupied a prominent place in the medical man's pharmacopoeia. But recently a powerful crusade has been organized against its use, and the leaders in the movement boldly declare that it either possesses no therapeutic efficacy at all, or that its remedial effects could be equally well produced by other drugs. This is the fact that has mainly determined me to take up the subject of alcohol on the present occasion. In the words that I shall have the honour of addressing to you my principal object will be to point out the position of alcohol in the treatment of disease and the uses to which it may safely be applied, where it undoubtedly acts efficaciously, and where its exhibition may be advantageously withheld. In addition I shall endeavour to give some particulars bearing on its later history.

The use of alcohol in the treatment of disease goes back to remote times. Up to a comparatively recent date it was given more or less empirically. With the growth of physiology a scientific element was introduced into the *rationale* of its administration. A cursory review of the physiological position with regard to alcohol forms, therefore, a natural basis for the present address. What, shortly, is the influence of alcohol in moderate doses upon the heart and blood vessels, the nervous system, and metabolism?

With regard to the precise action of alcohol on cardiac muscle, opinion varies. Drs. Loeb and Bachem in Germany and Dr. R. E. Dixon in this country assert that in small doses it is capable of directly increasing the activity of heart muscle. On the other hand, it is held that this contention has still to be proved.

It is generally agreed that dilatation of superficial blood vessels follows the use of alcohol through the influence of the drug on the vasomotor nerves. In this way the action of the heart is relieved and its efficiency is increased; but when the question of the blood pressure is considered a difference of opinion arises. Physiologists of various countries insist that the pressure is maintained, owing either to a constriction of the vessels in the interior of the body or to an increase in the output from the heart. Other views on this subject of the blood pressure are held by some clinical observers. The medical evidence recently given by Dr. Ralph Stockman before the Whisky Commission has an interesting bearing upon this point. He conducted a series of experiments on himself and on three other medical men with pot-still whisky, patent-still whisky, brandy, and diluted pure alcohols. In the first place, he found that the results produced on the circulation by whisky and brandy were due to their alcoholic contents and not to the residues or distillates—in other words, the action was essentially that of alcohol. Coming to the point under consideration, he stated in evidence that alcohol, taken under conditions of perfect quietude, did not influence the pulse-rate or blood pressure. Under large doses of the drug the blood pressure falls.

Upon the brain and nervous system alcohol does not act as a stimulant. It has, on the other hand, a depressant effect. And it is this sedative, benumbing action of which the physician makes use. "No one," says Schmiedeberg, "will expect any special advantage from a stimulation of the sensations and of the mental functions in disease. We aim rather, as much as possible, at protecting from every form of excitement those areas which are usually in a state of increased sensitiveness, and consequently

keep all strong stimuli arising in the outer world as carefully as possible away from the patient. These efforts are assisted by a mild narcosis which the taking of the wine brings about, even although it be no more than a slight deadening of the hypersensitiveness. Just as rest enlivens and refreshes, so can wine have a like effect by favouring the conditions for rest, although it does not stimulate any function directly."

With regard to the value of alcohol as a food there is a fair consensus of opinion. Graduates of Edinburgh University will recall the interesting lecture of Sir Thomas Fraser on the Life-History of Alcohol in the Human Body. As the result of investigation he found that an average man can consume 1 oz. to 1½ oz. of absolute alcohol in twenty-four hours, according to weight. The products of oxidation did not cause any increase in the amount of carbonic acid or urea excreted, because while still in the body it impaired cell action. On the assumption that it was consumed as food, alcohol has the same value as a carbohydrate of equal weight. Pursuing his experiments upon patients, he observed that in the case of patients on normal diet with steady weight, on the addition of 1 oz. to 1½. oz. of dilute alcohol to the diet the weight was increased; that in patients with a more than sufficient diet and increased weight alcohol increased the weight still further; and that in both of these classes of patients the general heaith was disordered by the stimulant. On the other hand, he found that when alcohol was given to patients upon a restricted diet with diminished weight, in a few days there was a slight increase in weight, while the general condition was rather better, sleep was secured, and the other functions were satisfactorily maintained. The material point is that the decrease in weight was checked. The conclusions at which Sir Thomas Fraser arrived have been corroborated by subsequent observers. It is hardly necessary to add that alcohol is readily absorbed by the stomach when other nutriment cannot be retained, while it also acts as a stimulant to gastric digestion.

These, then, are the chief physiological data which guide the clinician in the use of alcohol as a remedial agent—the widening of the blood channels with increased flow of blood to the brain and other organs, with a diminished resistance in the peripheral vessels and temporarily increased activity of the circulation, the lethargic action on the brain and the widely admitted fact that alcohol possesses a certain definite value as a food.

Consider, now, in the first instance the use of alcohol in lobar pneumonia. For the past fifty years the treatment of this disease has afforded much material for debate. To-day it is still a vexed question, bristling with points of controversy. On one matter there is agreement—that the present treatment is unsatisfactory. The result is reflected in the figures which tell the story of its fatality. It has been computed that in England and Wales with their population of thirty millions over 220,000 persons are annually attacked by this disease, and that the attendant mortality is 14½ per cent.

If we bear in mind that pneumonia or pneumonic fever is an acute specific infection caused by a germ, the manifest desideratum is an antidotal virus to do for it what serumtherapy has done with happy results for diphtheria. In the absence of a curative serum the remedial treatment is symptomatic. What, then, is the position of alcohol? Assuming that the views of eminent specialists as presented in current medical literature may be taken as fairly indicating the trend of professional opinion, we may advance the general proposition that alcohol, judiciously employed, plays a useful and important part in the treatment of this disease. On the other hand, there is a considerable body of medical men who altogether refuse to admit its efficacy, while there still remain a few practitioners with whom it is an article of faith to treat all cases of this kind with copious libations of brandy; but they are a decadent minority.

The points to which the physician looks for guidance in its use are the state of the heart, especially with regard to the onset of over-distension of its right side, with the small, rapid, feeble, and irregular pulse, the embarrassed breathing, the facial pallor, and the other symptoms of what has aptly been described as "right-heart misery." The presence of rigid vessels is also an indication for its use, as well as the occurrence of delirium.

With some practitioners it is the custom to withhold alcohol until the pulse begins to flag, while others would apply it judiciously throughout. It is the cardinal rule of the many to employ free stimulation with alcohol in increasing doses towards the crisis. Administered on these lines, it is regarded as a valuable and necessary aid to such other stimulants as strychnine, digitalis, and oxygen.

Dr. A. O. Affleck of Edinburgh has recently made an important contribution on this subject. He points out that the same value does not attach to the use of alcohol as a heart supporter as formerly; for most cases it is believed by many to be unnecessary, and that even in the case of the aged and feeble its employment in any but small amount may be harmful. While Dr. Affleck is far from denying it a place in the therapeutics of pneumonia, he believes it to be inferior to strychnine for the heart, a drug which he thinks might often be given with good effect early in the disease.

The views expressed by Dr. Affleck form a link, as it were, with the body of medical opinion which sees no advantage in the employment of alcohol, and is entirely opposed to its use in the treatment of disease. The practitioners of this school are largely identified with the work of temperance reform. The London Temperance Hospital may be looked on as the mouthpiece of the movement. Instituted in 1874 as a protest against the excessive use of alcohol which was then the practice, it has grown in importance, both as regards the scope of its work and the number of its patients. The object for which it exists is to discourage the employment of alcohol and to furnish trustworthy evidence of the results of its disuse. In 1906, with over 1,200 patients on the register, alcohol in the form of rectified spirits of wine was given in four cases, all of which were fatal. Last year (1907) there were about 70 cases of pneumonia under treatment. The medical staff claim that the results they obtain without alcohol compare favourably with those of other hospitals. Whether that be so or not, the unwisdom of forming a broad generalization from a comparatively limited number of cases is obvious. And, besides, in a disease like pneumonia there are many contributory factors and side elements which have to be taken into consideration. The experience of this hospital only serves to show what is generally recognized, that the majority of these cases get well without alcohol. It does not affect the issue in favour of its utility in certain contingencies. I daresay many of you can recall instances where the timely use of alcohol at a critical juncture has turned the scale when life was trembling in the balance. After all, an ounce of practice is worth a pound of theory.

Let me now direct attention to the use of alcohol in the eruptive and continued fevers and submit to you a few impressions drawn from my experience at the Carlisle Fever Hospital.

It is commonly agreed that as a rule, under normal conditions, young children, who form the large majority of these cases, go through the eruptive fevers without the aid of alcohol or any other drug. But there are exceptions. There is, for example, the occurrence of pneumonia in scarlet fever, associated with nephritis, or with gangrenous sore throat—the so-called deglutition pneumonia—or, again, the pneumonia arising independently of these sources. These are all conditions of true croupous pneumonia. For the renal form of the disease there is a direct drawback to the exhibition of alcohol, but in the deglutition pneumonia and in septic conditions generally the use of alcohol has proved of service.

Again, in the treatment of diphtheria in children alcohol has a place. It is useful as an aid to strychnine in the grave attacks of syncope which from time to time occur in that disease with startling suddenness. Repeated vomiting, also, is an obstinate symptom to cope with, especially when associated with a septic state, quick, irregular, or intermittent pulse and albuminuria, indicating severe intoxication. In such conditions, when peptonized food and nutrient enemata have failed, iced brandy has alone been retained by the stomach. Nourished on alcohol in this way, for several days patients have been tided over a critical period and put in the way of ultimate recovery.

To say that many cases of typhoid fever do not need alcohol is a loose way of stating that the disease frequently

runs a mild, uncomplicated course. Alcohol, however, is never given in the local hospital as a matter of routine, and its employment is subject to periodic revision. A frequent low tension pulse with dicrotism, a sustained high temperature with muttering delirium, marked tremor, and septic conditions, these are the symptoms which distinctively call for its use, and which have been found to be relieved by its administration.

A cognate question may arise as to the proper course to adopt in the case of persons suffering from this disease who have been used to taking alcohol habitually to excess. Ought they to be put upon stimulant as soon as they come under treatment on the ground that they are supposed to be dependent upon it, or should alcohol be withheld until the special indications for its employment are apparent? Professional opinion upon this point is variable. Two cases that recently came under my observation at the hospital are of interest in this connexion. The salient points are these. The patients, a man and a woman of middle age, living about four miles from the hospital, were intimated to the local authority in the third week of their illness to have typhoid fever. The man had already had several attacks of intestinal haemorrhage. To remove patients such a distance, at a critical stage of their illness and under these special conditions, was palpably to contravene the primary canons of precaution in this disease. But in point of home surroundings the state of affairs was most unfavourable. Extraordinary circumstances justify exceptional measures, and as Hudibras says:

> For when your case can be no worse
> The desperatist's the wisest course.

To say that these persons had been for years addicted to the inordinate use of alcohol is a euphemistic way of stating a plain but pathetic fact. After admission to hospital the cases ran a protracted course of some severity—the man continued to have haemorrhages for some weeks, the woman suffered from a suppurative otitis media, one of the rarer incidents in this fever. Neither patient, however, presented in a marked degree the special indications for the employment of alcohol, and it was accordingly withheld throughout their illness, which ended in recovery.

The experience of these cases gives a measure of support to the view that the mere history of previous excess is no reason for the immediate exhibition of alcohol. (A series of charts was then exhibited.)

Typhus fever has only an academic interest for the general practitioner. His chief concern and trouble are with the diagnosis. The views of Murchison on the use of alcohol in this disease hold in the main to-day. Patients under 20 years of age do best, as a rule, without it; most patients over 40 are benefited by it from the commencement of the second week, while persons of intemperate habits require alcohol earlier and in greater quantity than others. Typhus, in sharp contrast to typhoid fever, runs a swift, short, definite course, with a crisis like pneumonia. In the sleeplessness and delirium characteristic of this disease, the benumbing effects of alcohol are utilized with benefit. The "perpetual moan" of these patients is turned to "dreamful ease" under the soothing influence of good whisky and paraldehyde.

The use of alcohol in lobar pneumonia and typhoid fever have been considered in some detail because these diseases are the classic battleground on which the alcohol controversy has been so often waged. Other maladies or conditions will occur to you in which experience has proved the utility of alcohol. As a sedative, for example, in certain nervous ailments, as the modest but serviceable nightcap in the sleeplessness of old people, or as a dietetic in the convalescence from acute diseases, whether it is taken in the form of beer or stout, or the "mellow-tasted burgundy."

On the other hand, there are states in which the use of alcohol ought to be discouraged. It is barred in acute forms of renal disease. In neurotic conditions associated with feelings of depression, where it is taken for the temporary but agreeable relief it affords, it is best withheld. Necessary as it is at all times to bear in mind the insidious qualities of alcohol and the remote pathological effects of its abuse, a special warning must be uttered in dealing with diseases peculiar to women, in view of the fact that of late years there is evidence to show that female intemperance is on the increase.

And now with regard to the administration of alcohol. The admission must be made that even to-day alcohol is frequently given in a haphazard fashion and as a matter of routine. Too often it is allowed merely in deference to the wishes or entreaties of patients or their relatives, who have views of their own on the subject which they are not as a rule slow to impart to the medical attendant. A recent charge of malpraxis has an interesting bearing on this statement, where it was alleged by the prosecution that the lax or wrongful employment of alcohol by a medical practitioner hastened the death of a patient. But if alcohol is to keep its place as a therapeutic agent it must be administered on rational lines. The same scientific precision must safeguard its use as in the case with other powerful drugs, such as strychnine or opium. As with these, so with alcoholic stimulants, a fixed standard of purity must be secured. With regard to whisky, for example, which has lately fallen from favour as a stimulant in disease, owing to the uncertainty of the results which attend its analysis, it is generally admitted that spirit of this kind should be kept in bond for an age-limit of at least two or three years before it is taken out for consumption. Brandy is perhaps more largely prescribed, partly because of its recognized purity, and partly because it has a place in the *British Pharmacopoeia*.

But in whatever form alcohol is applied the dosage must be definite—6 oz. to 9 oz. being a reasonable daily range for an adult—its employment must be subject to frequent revision, and it must be at once withdrawn when the object for which it was given is attained.

In the history of therapeutics there is nothing more striking than the remarkable modification that has come over medical opinion during the past thirty or forty years with regard to the remedial use of alcohol. About the middle of last century Allison, Graves, Stokes, and Todd advocated the liberal employment of stimulants in fevers. They based their teaching on the theory that alcohol was an article of food. By their personal magnetism they dominated with their views the rank and file of the profession. And alcohol was given with a prodigal hand. Stokes tells of a patient that "brandy was freely administered to him, and omitted only when the patient showed symptoms of its disagreeing with his brain," a delicate way, surely, of depicting a condition which in those days of large doses must have been far from uncommon. In the case of a year-old child with pneumonia Anstie gave 6 oz. of wine daily and nothing else for twelve days; 24 oz. of brandy with no other sustenance for similar periods of ten days was a customary incident in the case of adults. Bentley Todd gave a girl with typhoid fever and pneumonia 48 oz. of alcohol in twenty-four hours.

The fashion in colossal doses had its day, and a new era of reaction has taken its place. In this connexion Sir Victor Horsley has compiled a set of official facts and figures which bring into sharp relief the altered attitude of medical men with regard to this question. I will not burden you with statistics, but I will try to put the substance of his tables before you in an easily digested form. An analysis of the money spent upon alcohol and milk by several London hospitals was made, giving the returns for one year in each decade from 1862 to 1902. In 1862 the cost of alcohol per bed was £3 8s.; in 1902 it was £1 5s. The cost of milk per bed in 1862 was £1 6s.; in 1902 it was £3 18s. So it appears that in point of consumption milk and alcohol have changed places. In the case of the Metropolitan Asylums Board the cost of stimulants fell from 1s. 4.7d. per head in 1894 to 4.5d. in 1905. These results are supported by the returns from local institutions. At the Cumberland Infirmary, Carlisle, the average annual cost for alcohol and malt liquors during the past ten years works out as follows: Alcohol, 11.5d. per head; malt liquors, 0.6d. per head, or about 1s. in all. During the last three years, 1905–7, the figures per head are: Alcohol, 5.2d.; malt liquors, 0.4d.; total, 5½d. Alcohol does not enter largely into the treatment of the insane, but the statistics furnished by the Cumberland and Westmorland Lunatic Asylum virtually repeat the above experience. From 1862 to 1906 the average cost per head for wines, spirits, and porter was $1\frac{2}{16}$d. Up to 1900 the cost was always above 1d., in 1875 touching 3½d. Since then it has kept below 1d., almost reaching the vanishing point in 1906, when the cost per head stood at $\frac{1}{16}$ of a penny.

In commenting generally upon these returns, it will be noticed that they contain no information of the results of treatment. That is an important omission. And, again, the greatly increased consumption of milk in our various hospitals raises a pertinent question: What precautions are the managers of these institutions taking to safeguard the purity of the milk service? It is well known to you that the dangers associated with milk in the way of conveying disease, are many and serious. Existing legislation on the subject is notably defective, while it is common knowledge that the hygienic regulations which are in force are inadequately administered by many sanitary authorities.

Broadly stated, then, it is obvious from the figures which have been quoted, that medical opinion has markedly changed, and there is a fear that following the tendency of reaction, the swing of the pendulum may go to the opposite extreme.

What are the factors that have operated to produce this result? There are, of course, habits or fashions in therapeutics as in everything else. Fashions in the past have sometimes been regulated by the prevailing theory of the origin of disease. In the days, for example, when diseases were set down to inflammation, bloodletting was all the vogue, and the use of alcohol was looked on as a perilous enormity. Then came the period when our bodily ills were ascribed to lowered vitality, and stimulants were administered to therapeutic excess. At the present day the bacterial origin of disease does not materially affect the employment of alcohol, which is generally given with judgement and discretion on the lines which have been indicated.

A consideration of the influences which have tended to lessen the use of alcohol would be incomplete without a reference to the work of the medical advocates of temperance reform. Temperance propagandism, from a professional standpoint began about the end of the eighteenth century. With a Scotsman, not inappropriately, rests the distinction of inaugurating the movement, for a certain Dr. Trotter of Edinburgh, it appears, wrote a treatise on the effects of drunkenness on the human body, which was published in 1804. From that time onwards the history of the agitation has been one of progress. Simultaneously, with the wave of temperance that has flowed over the country in recent years it has taken on fresh activities, and at the present day a group of eminent medical specialists are conducting a vigorous campaign against alcohol.

Every one must admire the unselfishness of their devotion to a crusade which makes for the solution of a grave social problem. The mental and physical deterioration wrought by the abuse of alcohol are evils with which we, as medical men, are only too familiar. But these reformers go further. With much strength of language and on every occasion—in the press, on the platform, and in book publications—they roundly assert that as a food alcohol is useless and as a remedy it is harmful and unnecessary. The profession, it seems, has changed its views on the subject, and in a tone of finality we are told that in the matter of alcohol we are on the high road to therapeutic nihilism. Referring to the hospital statistics which have been cited, they argue that if to the economies effected by the restricted use of stimulants were added the elimination of cases which were due to drink, the thorny task of hospital finance would be solved for ever. With a sublime confidence in the future they base their visionary forecast on the modest assumption of creating a sober nation.

The danger of establishing the habit of inebriety by the remedial use of alcohol is a matter of grave concern to the apostles of temperance reform. They have equipped a hospital to deal with this evil. The distinctive principle of the London Temperance Hospital is to guard patients from the perils that beset them in this way. That exceptional cases do occur which may be put down to this cause is freely admitted. The question, however, is a complex one. It is difficult to collect anything like accurate information on the subject. We know how ready the public are when anything goes wrong to lay the blame upon the doctor. Looking back over the past twenty-five years, I cannot help thinking that this danger has been greatly exaggerated. By caution and discrimination the element of risk should be largely corrected, and, in any case, the good of the greatest number is the first consideration which overshadows everything.

A favourite device with the opponents of alcohol is to refer to it invariably as a poison. The motive is obvious. In the course of a discussion on this subject which took place in the House of Commons under the late Government, professional opinion was quoted in favour of this view. Speaking to the question, the Lord Advocate said, "As for the medical evidence, we must be driven to the conclusion that in this case as in others doctors differ. When we hear it stated that alcohol is a poison, I wonder if honourable members are aware that the Majority Report of the Royal Commission contained these words: 'We must recognize the fact that most people still regard alcohol as an ordinary article of diet which is only harmful if taken to excess.'" And he concluded: "It is idle to say that alcohol is a poison and nothing more, and that the use of it is inconsistent with any work demanding acute and alert judgement."

A suggestion coming from a society called the International Union of Medical Abstainers was put forth some time ago in the British Medical Journal. It was to the effect that an inquiry be made as to the value of alcohol in lobar pneumonia and typhoid fever, and the International Union has invited the staffs of hospitals in various countries where it is represented to co-operate in the work. The idea is to treat all cases of these diseases alternately with and without alcohol. Apart from the humanitarian aspect of the proposal, I wonder whether, if a member of this union were seriously ill, he would adhere to his guiding principles—if he would remain faithful to his dogma? From a speculative point of view it is an interesting question. It is whispered that a well-known doctor—a professed advocate of total abstinence—was in the habit of taking champagne when his energies were flagging. They often flagged.

Early last year a noteworthy pronouncement on the use of alcohol—strongly traversing the views of medical reformers—appeared in the *Lancet*. It was drawn up by a group of well-known medical experts who, recognizing that in the employment of alcohol the needs of the patient must be the first consideration of the professional man, expressed the opinion so long and generally held that in disease alcohol is a rapid and trustworthy restorative. And the signatories further hold that in many cases it may be truly described as life-saving, owing to its power to sustain cardiac and nervous energy whilst protecting the wasting nitrogenous tissues.

The manifesto discharges a kindly service as a protest against the uncompromising opposition of a body of extremists to the rational use of alcohol. It does more. It applies a spur to the indifference displayed by many medical men with regard to an eminently practical question. It is true that on minor points a divergence of opinion exists, but on fundamental principles there is common agreement. In the past the instruction given in our medical schools on this many-sided question was scanty and inefficient. It is doubtful if the student of to-day is as thoroughly impressed with its importance as he ought to be. If the subject were taught in a sound and systematic manner, the young practitioner would be better fitted to form a judgement on one of the difficult problems that confront him on the threshold of his career. But he would still do well to bring to its solution a broadminded spirit of tolerance and moderation.

To recapitulate, in the foregoing remarks I have endeavoured to trace the position of alcohol as a therapeutic agent. I have shown how in this matter the attitude of the profession has undergone a marked change. A system of excessive dosage has given way to caution and conservatism in its exhibition, and the reactionary tendency to go to the opposite extreme has been indicated. Alcohol is a drug, and as such must be administered with the same precision and discrimination which we employ in prescribing other powerful drugs. Given with these precautions, alcohol is an invaluable remedy in the treatment of disease.

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OPERATION AT END OF FIFTH MONTH FOR EXTRAUTERINE GESTATION WITH LIVING FETUS:

RECOVERY WITHOUT RECURRENT OR SECONDARY HAEMORRHAGE.*

By ALBAN DORAN, F.R.C.S.,

SENIOR SURGEON TO THE SAMARITAN FREE HOSPITAL.

In the following case pregnancy began in the left Fallopian tube. The last show, four months before the operation, was no doubt a uterine haemorrhage caused by the abnormal gestation and not a menstrual period, as the fetus was too well developed to represent only four months of pregnancy.

J. E., aged 35, was admitted into my wards in the Samaritan Free Hospital on July 3rd, 1908. She was sent to me by Mr. Boodle, of Sittingbourne, suffering from an abdominal tumour of uncertain nature. This patient was fairly nourished, but her hair was turning grey. Her cheeks were flushed. She had been married for eleven years and her only child was 10 years of age. Since its birth until the present illness there had never been any signs of pregnancy.

History.

On Easter Day, April 19th, when scrubbing her floor, the patient had a sudden attack of hypogastric pain and vomiting, and at once took to her bed. Mr. Boodle noted symptoms of peritonitis with tenderness chiefly to the left of the hypogastrium. A distinct lump was definable in the region of the appendix a day or two later.

The catamenia during the past three years had become irregular, with intervals of seven or eight weeks. They had also grown scanty and painful. I found after careful inquiry that there had been no show of any kind for four months before admission.

The patient was kept in Rochester Hospital for several weeks, and was ultimately discharged at her own request. Mr. Godfrey Taunton kindly informed me: "The physical signs when she was in hospital were: Fullness in the left fornix, slightly impaired mobility of the uterus, which seemed enlarged, the sound passing 2¾ in. During the last week of her stay there was distension of Douglas's pouch with fluid. The temperature ranged from 101° to normal. There was no obstruction of the bowels, but much constipation, requiring enemata. There seemed to be no evidence of rupture of a fetal sac; in fact, the only symptoms complained of were abdominal pain and occasional sickness. The patient gave a history of passing a decidual cast, but also stated that she frequently passed something of the kind. I could define no fetus or fluid swelling in the abdomen, and my diagnosis lay between salpingo-ovaritis and extrauterine pregnancy."

After her discharge from Rochester Hospital the fullness increased until Mr. Boodle was able to define a circumscribed and fluctuating tumour.

Condition on Admission.

I found the abdomen distinctly distended but not tense. A tumour occupied the hypogastrium, extending as high as the umbilicus. It lay mostly to the left of the middle line, and was hardly movable. Palpation was painful, and set up contraction of the muscles of the abdominal wall. The tumour was more definable on the left than on the right side. Fluctuation was not marked. Distinct gurgling was noted over the right iliac region.

The cervix was thick and short, and closely connected with the tumour in the abdomen. A soft mass occupied Douglas's pouch and the left fornix; it was tender to touch. The sound passed for 4½ in. upwards and forwards; there was no blood or sanies on its point when withdrawn, but some clear glairy mucus. The uterus and mass were almost fixed. The breasts were fairly developed but flaccid; no milk could be pressed out of them. The areolae were well marked; the patient's complexion was naturally dark. The tongue was pale and rather glossy. The bowels, previously regular, had been constipated all through the illness. The patient had suffered from dysentery in 1902 and 1904. The pulse was 84, small, compressible, and distinctly intermittent.

Diagnosis.

I kept the patient under observation for seven days. The temperature did not rise above normal. On July 5th an attack of pain occurred and kept intermitting all the afternoon, passing away before the night. No fetal heart sounds could be heard on auscultation. Not a trace of blood or sanies came away before the operation, and their total absence was somewhat misleading. Although the history suggested ectopic gestation, I rather suspected axial rotation of an ovarian cyst, with subsequent adhesion of intestine. It is true that there had been absolute amenorrhoea for at least four months if not five, but that symptom has been observed when a patient's health is impaired by the pain and the local peritonitis caused by twisted pedicle; besides, the total absence of haemorrhages is unusual in extrauterine pregnancy. The condition of the breasts and areolae did not absolutely favour the diagnosis of pregnancy; the outer limits of the areolae were sharply defined as in many dark-complexioned subjects when not pregnant. Still, diagnosis was very obscure, as the symptoms of several pelvic diseases which seemed possible in this case are known to be irregular.

Operation.

I operated on July 10th, assisted by Dr. Drummond Maxwell, Dr. Belfrage administering the anaesthetic.

On opening the abdominal cavity I found much intestine adherent to the tumour. On setting the bowel free I noted that the vermiform appendix was quite healthy.

The tumour was now seen to be a big cyst. Its walls were dull and of a deep ochreous colour, such as is seen in an ovarian dermoid after chronic axial rotation. On tapping, a little turbid fluid came away. I then passed my hand behind the cyst, and could feel a fetus lying in its lower part. I pushed the greater part of the cyst gently out of the abdominal wound and carefully enlarged the tapping puncture with scissors till I was able to extract a fetus of about the twenty-fourth week, which showed signs of life. The sigmoid flexure ran on the posterior wall of the sac.

Although I took pains to extract the fetus as gently as possible, the greater portion of the placenta was torn away with it. The sac wall bled profusely. I packed the cavity with a long roll of gauze, and as the cut edge of the sac bled freely I made a purse-string suture round it, but I drew on it very little, as the least traction affected the sigmoid colon, which was incorporated with the wall of the sac. The bleeding from the edge was, however, checked by the suture without much traction. On the other hand, the cavity of the sac required repeated packing. I sewed the edge of the sac lightly to the parietal peritoneum and closed the abdominal wound except at its lower extremity, where a portion was left open on account of the gauze packing.

After-History.

There was much oozing for four hours after the operation, and a pad was twice applied to the lower part of the abdomen. For two days the patient suffered from nausea and vomiting with high pulse.

At 12 p.m. on July 12th, fifty hours after the operation, Dr. Belfrage administered chloroform and I prepared to dress the wound. I feared that the haemorrhage might recur, as in cases recorded by Malcolm[1] and others. In drawing the gauze out of the wound I found that it was saturated with blood which had become very fetid. When the sac was emptied I was greatly relieved as I noted the total absence of oozing from any part of the sac. About two or three minutes later I passed some dry, absorbent wool into the lowest part of the sac, and on retracting it I found that it was not stained with fresh blood. I packed the cavity of the sac lightly with a roll of gauze.

Within seven hours rather free uterine show, the first for four months, was observed, but there was no more oozing from the sac. No traces of decidua came away from the uterine cavity then nor later. Much fetid, bloody fluid collected in the sac for several days after the dressing; it was washed out with antiseptic solutions. The dressing gave the patient great relief; flatus passed freely, and the bowels were easily relieved by enemata. The knot of the purse-string suture came away on July 17th, and the remainder, with the sutures fixing the sac to the parietal peritoneum, were gradually eliminated.

By July 23rd, the cavity of the sac had greatly contracted, so that it had become a sinus. A sound introduced into it passed 5 in. downwards and backwards. On pelvic exploration, the uterus was found to be distinctly movable. The end of the sound which had been passed into the sinus could be felt touching the anterior wall of the rectum behind the uterus.

On August 10th I left the patient under the charge of Dr. Drummond Maxwell. The sinus, as was expected, contracted very slowly, and there was some purulent discharge, free from faecal odour.

On September 9th the patient was discharged from hospital. I examined her on my return from a vacation, two days before she left my wards. She had gained flesh, and was in very good general health. The sinus had become narrow and tortuous, discharging a little pus daily. The cervix had undergone very marked involution, having become short and thin, whilst, when I examined the parts before the operation, it was very thick. The sac seemed to have contracted on to the back and fundus of the uterus, the whole mass being to a slight extent movable. The right fornix and Douglas's pouch were free. A slightly tender body, feeling like the ovary, could be defined in the left fornix. There had been no period since the operation.

On December 1st Mr. Boodle informed me, in reply to a letter, that the patient was very well in general health, and only complained of a feeling of soreness over the left inguinal region. The sinus was gradually getting shallower. Menstruation had recently occurred but the show was scanty.

The Fetus.

The height of the fetus was 23 cm., or nearly 9 in. The hairy scalp was distinct, the eyebrows well developed. The skin was almost opaque, not wrinkled, and bore no distinct lanugo. The

* Read at a meeting of the Obstetrical and Gynaecological Section of the Royal Society of Medicine, December 10th, 1908.

limbs were well developed, with perfect hands and feet, bearing equally perfect fingers and toes; the nails were very short. The external organs were of the female type, distinct and without any visible anomaly; meconium escaped from the rectum, and there was no sign of spinal deformity, fissures of the lip and palate, or ectopia of the viscera. This fetus moved its limbs and distinctly cried when extracted, and it showed signs of life for some minutes after delivery. At the end of the fifth month the fetus of intrauterine pregnancy measures about 25 cm. in height. Granting that an ectopic fetus is less well-developed, especially as regards nutrition, I think that the proportions in this specimen indicate that the pregnancy had advanced to the end of the fifth month.

Placenta and Cord.

The placenta, as I have already stated, was torn through during extraction. The greater part, very thick, appeared quite normal; but at the edge there was a large infarct, over 2 in. long by 1 in. broad and 1 in. thick. The laceration during extraction seemed to have begun on the brittle tissue of this infarct. The portion of the placenta removed, some 4 in. in width, included the umbilical cord, which was 8 in. long.

The acute attack of pain on April 19th seemed to indicate rupture of the tubal sac into the left broad ligament, and a "posterior tubo-ligamentary pregnancy" (Taylor), as I found it to be at the operation. The lower boundary of the sac, in that case, was therefore the rectum. The pressure on the bowel caused constipation, as Mr. Taunton reported, and as was the case after admission into my wards, until the removal of the gauze packing. The placenta was *not* attached to the bowel, else there might have been diarrhoea (Freund). The fetus was living, therefore *Bacillus coli* infection, not rare in posterior tubo-ligamentary pregnancy, had not taken place.

The most important question, however, in regard to this case is the treatment of the sac. I fail to see how I could have adopted any safer method than that which seemed to me the only way to save the patient's life. The tearing through of the placenta was accidental, whilst on my attempting to remove the remainder so much haemorrhage occurred that I left it alone and packed the sac. Arterial blood spouted from the cut edges of the sac, but the purse-string suture checked it at once. The sac was secured to the lower edges of the abdominal wound, otherwise the packing would not have been effective. The packing was removed on the second day and the haemorrhage did not recur.

On the other hand, the disadvantages of this method, inevitable under the circumstances in my case, were clearly manifest to me. The cyst wall, let it be remembered, consisted not only of the posterior layer of the broad ligament but also of the adjacent peritoneum of Douglas's pouch. Therefore, when I drew tightly the purse-string suture on the cut edge of the cyst wall, the large intestine was dragged down, forming a sharp angle, so that obstruction would have occurred had I not relaxed the suture considerably. Then this same suture, as well as those which fixed the edges of the sac to the wound, did not come away until much local suppuration had taken place and the pus mixed with the sanies from the remains of the placenta made up a fetid semifluid substance which necessitated daily dressings of the sac.

Lastly, I dreaded the spread of the suppuration, as in Dr. Herbert Paterson's case;[2] but I feared much more the recurrence of haemorrhage, as in Mr. Malcolm's, to which I have already referred, and fortunately there was no more bleeding, and the suppuration did not extend. Still, I understand that Dr. Paterson and others find that sutures and ligatures may be dispensed with in the treatment of the fetal sac late in pregnancy, and I desire to learn how far this method guarantees the patient against that essential and imminent danger, never absent when the fetus is alive—namely, haemorrhage.

REFERENCES.

[1] An Operation between the Third and Fourth Months of Extra-uterine Gestation, with removal of a living fetus and much trouble from haemorrhage during convalescence, *Trans. Obstet. Soc. Lond.*, vol. xlv, p. 382. [2] A Case of Extrauterine Gestation: Operation during the Sixth Month of Pregnancy, *Trans. Obstet. Soc. Lond.*, vol. xlvii, p. 326.

AT the annual meeting of the Wolverhampton Sunday Hospital Collection Committee it was reported that the income was £634 as compared with £653 in the previous year. The money has been allocated as follows: General Hospital, £447; Eye Infirmary, £99; Women's Hospital, £49. The expenses have been slightly reduced.

A CASE OF TUBAL PREGNANCY WITH EARLY OPERATION.

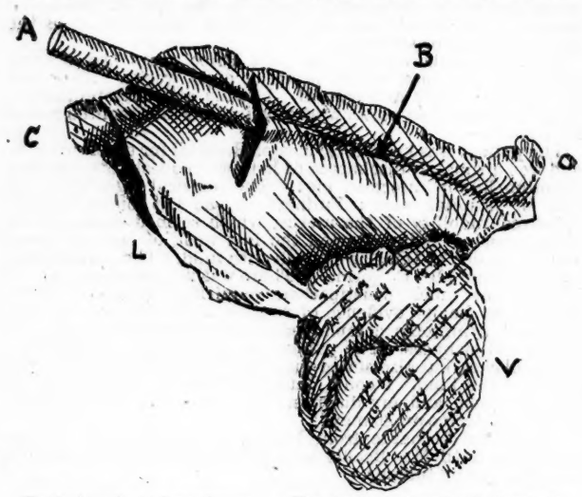
BY HOWARD F. WARNER, M.B., B.S.LOND.,
M.R.C.S.ENG., L.R.C.P.LOND.,
HAYWARD'S HEATH.

THE interest in this case lies not so much in its rarity, for such cases are by no means uncommon, but in the somewhat puzzling nature of the symptoms, their comparative mildness, and in the short period after actual rupture at which the abdomen was opened.

Mrs. X., aged 42, married three years, had had no children, but one very early miscarriage about two years ago. She had always suffered from spasmodic dysmenorrhoea, menorrhagia, and, since marriage, from dyspareunia. She complained that for two days she had had abdominal discomfort and pain passing through to the sacrum, exactly similar to the pain generally experienced with the menses, but more acute. She had hitherto been always regular, but at the present time was about one week overdue, and though there was a "show," the flow was not as copious as usual. There was great pain on attempting to micturate and considerable difficulty; the pain was also felt passing through into the rectum and in the right iliac fossa.

The patient was of a very neurotic temperament, and considering her age and previous menstrual history it seemed probable on the first visit that the symptoms might be due to a somewhat early menopause. Hot turpentine fomentations, warm douches, and rest in bed, together with a placebo, were ordered, and on the following day the pains were much better.

I heard nothing further of the patient for seven days, during which time she had been gradually getting about again; then



Posterior view of specimen. A, Glass rod passing firstly through secondary rupture in broad ligament, and then through primary rupture into the tube; B, external limit of sac in tube—the rod will not pass beyond this point; C, divided end of tube; this is closed up; O, ostium abdominale (closed); L, broad ligament, cut edge; V, ovary.

I was sent for, to find that the pains had come on again, and were now of a definitely colicky nature, the flow had become more profuse, and trouble with micturition was again present. On examination the patient complained of tenderness all over the abdomen, which, however, moved well on respiration; deep pressure was impossible anywhere, but the tenderness was most marked just above the pubes, in the right iliac fossa, and in the right loin. She also stated that the pain from the loin radiated downwards to the vagina and down the right thigh. The kidneys were not palpable, there was no superficial tenderness anywhere, and beyond determining that muscular resistance was greater in the right iliac fossa than in the left, the abdominal examination was very unsatisfactory owing to the general deep tenderness. There was no jaundice and no history pointing to gall stone. At this time the temperature was 98°, and the pulse (taken at the end of the visit) was 84, the tongue was furred and moist, but the general appearance of the patient was quite good. The attacks of pain lasted about half an hour and "doubled her up"; there was sweating with the pain, but no vomiting, and during the attacks she had felt faint, but there had been no loss of consciousness. She was not anaemic. The urine contained no pus, and, owing to menstruation, it was impossible to attach any value to the presence of blood, but at this time I thought the diagnosis lay between renal colic, tubal pregnancy aborting, and possibly appendicitis.

Vaginal examination revealed an enlarged and very tender cervix; the uterus was freely movable, normally placed, and extremely tender, giving the same pain as the dyspareunia on being touched; owing to the tenderness nothing further could be made out, except that the rectum was fuller than it should have been if the history were correct. Rectal examination

revealed nothing further, and no swelling could be felt in the pelvis. Castor oil was given and morphine ¼ grain, hypodermically, and two morphine suppositories (¼ grain) were used at intervals during the night.

On the following day the condition had completely changed. The temperature was 99.5° and the pulse 120; the face had a definitely abdominal look, and for the first time the general appearance of the patient was not satisfactory. The pain was now mostly referred to the umbilical region and pelvis, and there had been vomiting as the result of the hypodermic injection of morphine on the previous day. The patient was restless but not anaemic, and was not anxious about her condition when not actually in pain. The pain was now more continuous and less colicky; the bowels had been freely moved three times after the castor oil, the motions being entirely liquid. Considering the diagnosis again I thought it unlikely that appendicitis could have lasted so long (twelve days) without any pyrexia hitherto, without the pain becoming localized and with the general condition keeping so satisfactory in spite of the diffuse abdominal pain, and also in the absence of general peritonitis to account for the diffuse pain. Renal colic was now unlikely, as most of the pain was umbilical and pelvic, was more continuous, the temperature was now raised, and the Hippocratic facies was becoming marked, and above all, the history of the case, revised in the light of its subsequent development, seemed to take on a new significance. I diagnosed right tubal pregnancy, probably aborting, and called in Mr. Buck, of the Sussex County Hospital, who came on the following morning.

Operation.

An anaesthetic was given, and with the muscles thoroughly relaxed it was possible to make out a doughy resistance in the right lateral fornix per vaginam, but nothing of the nature of a pelvic swelling; a small subserous fibroid was also felt in the anterior wall of the uterus (which doubtless accounts for other points in the patient's history); by the abdomen the examination was still negative. On opening the abdomen a swelling about the middle third of the right Fallopian tube was found, and a clot of blood rather larger than a walnut was adherent to the posterior surface of the broad ligament just below the tube. The tube, ovary, and part of the broad ligament were removed in the usual way, and less than an ounce of blood clot was found in Douglas's pouch and removed, and the abdomen closed.

On examining the specimen it was seen that the tube had ruptured into the broad ligament (possibly during the first attack of pain thirteen days previously), and that the broad ligament was now in the act of discharging the ovum through a small rupture on its posterior surface which must have been very recent on account of the very slight haemorrhage which had occurred, and was probably synchronous with the change for the worse which had occurred on the previous day, this being the first time that the peritoneum had actually been involved.

The ovum in this case cannot, at most, have been more than five weeks old before symptoms began, which in itself makes the case somewhat unusual, though by no means a record; but the interesting point, and one which should be emphasized, is the importance of early operation in doubtful cases of ectopic gestation. The haemorrhage (internal), pain, sleeplessness, and anxiety, if allowed to continue in the hope that medical means will suffice, must vastly prejudice the patient's chances when operation ultimately becomes necessary; and the surgeon is too often called in after the patient has been "watched" almost into the world to come, when the dangers, both operative and post-operative, are vastly increased, and at the best a slow and tedious convalescence is the result.

PERFORATIVE PERITONITIS FOLLOWING ENTERIC FEVER: OPERATION: RECOVERY.

By H. B. MYLVÁGANAM, F.R.C.S.,
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ALTHOUGH operative treatment for perforative peritonitis following enteric fever is the rational method of treatment, and although, at any rate in Colombo, such cases are frequently seen in the medical wards of the General Hospital and diagnosed early, the condition of the patients is so seldom favourable that surgeons rightly refrain from interfering with such cases. The vitality of a patient already lowered by this toxic disease, may not stand the additional strain of an operation attended with shock, under an anaesthetic. On the other hand under favourable circumstances, when such cases are left alone and if the severity of the primary infection is not great, there is some chance of such a case developing localized peritonitis and the inflammation terminating in an abscess which can be opened and drained under local anaesthesia.

Improved aseptic precautions and saline transfusions and injections of strychnine, etc., constitute the armament of the present-day surgeon to oppose the danger of shock and secondary infection following laparotomy. But with all these precautions, who can foretell what course the primary disease is going to run? Therefore, it is always with a great deal of diffidence that a surgeon undertakes to operate on such cases.

This report is based on a case successfully operated on by me in December, 1907, and I may mention that it is the very first case ever successfully tackled in Ceylon. A few months ago, prior to this case, my colleague Dr. T. F. Garvin and I operated on a similar case, but the patient survived only three days after the operation.

The patient, a fairly-nourished male, aged about 30 years, was admitted into the General Hospital, Colombo, on December 14th, 1907, with the usual symptoms of peritonitis.

History.

It was elicited that he had been suffering from a mild type of fever and headache for some days prior, but that his illness had not been severe enough to confine him to his bed. In fact, he was discharging his duties as an attendant of the Victoria Eye Hospital until the day previous, when he felt a sensation inside his abdomen as if something had given way while he was lifting a heavy lotion bottle. This was soon followed by acute pain in the abdomen, vomiting, and tympanites.

On admission the abdominal parietes were rigid and tender; tympanites was well marked, obliterating even the hepatic dullness; the bowels were constipated, and the right thigh was flexed. Pain was referred to the umbilicus, where tenderness was most marked. The tongue was dry and furred. Pulse 108, rapid, but of fairly good tension; temperature 102° F. My house-surgeon ordered a castor oil and turpentine enema and half a grain of calomel internally.

Diagnosis.

When I saw the case I decided to operate at once. I was mainly influenced by the favourable condition of his pulse and his general appearance. Four of my colleagues who happened to be at the time at the hospital also saw the case, and the diagnosis arrived at was either perforative peritonitis caused by the rupture of an ulcer of the bowel in an ambulatory typhoid, or of a gangrenous appendix.

Operation.

I made a median incision under chloroform, extending from the umbilicus to the pubis, and on opening the peritoneal cavity exudation lymph was seen, and gas escaped. The small bowel was inflamed, and the coils about the region of the umbilicus were adherent by recent lymph. The escape of gas led me to think that there was undoubtedly a perforation of a hollow viscus. I first examined the caecum and the vermiform appendix, and found them quite intact. When I traced the ileum from its junction with the caecum upwards I discovered, about 2 ft. from the caecal end, a perforation large enough to admit the tip of my little finger. The surrounding area was infiltrated and thickened. There was extravasation of faecal matter among the coils of the gut. My attempts to close the perforation with Lembert sutures were frustrated by the sodden condition of the bowel, but I managed to close the perforation without much delay, and mopped out the peritoneal cavity below the level of the umbilicus with gauze mops soaked in normal saline. I did not disturb the bowels above or resort to irrigation of the peritoneal cavity—a practice which I have long since discontinued. A gauze drain was placed in the recto-vesical pouch, and the abdominal incision closed in three different layers. The perforated bowel was gently wrapped up in the free end of the omentum and placed just below the abdominal wound. Two pints of normal saline was transfused into each armpit, and strychnine and adrenalin, ♏x each, injected hypodermically. The pulse after the operation was 140. At 10 p.m. it was 108. The patient was fairly quiet; the saline and strychnine injections were repeated. At 12.30 a.m. the pulse was 118 and of fair volume. He complained of thirst. He was placed in Fowler's position and a saline enema (about 8 oz.) was given at 4 a.m.

Next morning (7.30 a.m.) the pulse was 120 and small. He had slept fairly well, complained of no pain over the abdomen, and had passed urine naturally; no motions and no flatus had been passed. The temperature was 101.2° F. A saline enema (℥ iv) was ordered every third hour, and turpentine capsules (♏ v each) every fourth hour. At 4 p.m. the pulse was 120; he had passed flatus, but there was slight tympanites present. The turpentine was omitted; and eserine sulphate ¹⁄₂₀ grain in a drachm of water given every second hour. At 8 p.m. the abdomen was tympanitic and distended; no flatus had passed; the pulse was small and rapid. The turpentine capsules were repeated. At 9.30 p.m. he had vomited once or twice; the pulse was 120, and he had abdominal pain. He had had no sleep, and trional 15 grains was ordered.

On the morning of December 16th the temperature was 98.4° F., the pulse 106 and of fair volume. He had passed flatus and the tympanites was much less. He had vomited several times, and had pain over the abdomen. The dressings were removed; the discharge was offensive and slightly faeculent in odour. In the evening the temperature was 101.4° F., the pulse 124. Pain was much less; he had passed flatus and felt more comfortable. Eserine was repeated every fourth hour.

On December 17th the temperature in the morning was 100.6° F.; the pulse 108, of good volume. He had passed a motion on the previous night. Respiration was less laboured. Flatus had been passed; abdominal distension was much less and the patient felt better. A morphine injection was given at bedtime.

On December 18th the pulse was 126; he had slept well. In the evening he passed five loose motions. Morphine was repeated.

On December 19th the pulse was 110; he had slept very well; the bowels had been moved three times only. Bismuth and morphine was given internally. The abdomen became distended, but this was relieved by a soap enema.

On December 20th the morning temperature was 99.8°, the pulse 108 and of good volume. He had passed only one motion, and had slept well after a chloral and bromide draught.

From December 21st to 27th the temperature ran an irregular course; the bowels also moved freely, but no attempt was made to check the motions completely, as it produced distension and discomfort. Whenever the motions were too frequent bismuth and morphine were given internally. In the meantime he was given digitalis and nux vomica in a mixture, and was fed on cow's milk, malted milk, chicken broth, liquid peptonoids, brandy, etc. From December 27th, 1907, to January 1st, 1908, his temperature was normal, but there was then again a slight rise, not exceeding 99° F.

The abdominal wound became infected, and had to be dressed daily. At one time a little faecal matter passed through the lower end of the wound, but it has since ceased. Now the wound is almost healed, and the patient is enjoying ordinary diet. Widal's test proved negative three times.

Irrigation of the peritoneal cavity at the time of the operation is not attended with the best results. I believe it tends to spread the infection all over the cavity, and at the same time dilutes the antibodies formed by the organism to resist the invasion of the micro-organism; therefore the less the interference the better the result. Gauze drainage acts much better than rubber tubes by virtue of its capillary attraction. After the fourth day the abdominal cavity may be irrigated with a mild antiseptic lotion such as sterilized boric, as was done in this case.

I must express my gratitude to my house-surgeon, Dr. T. de Krelser, for the great attention and care bestowed on this case.

ON THE METHOD OF MEASURING THE SYSTOLIC PRESSURE IN MAN, AND THE ACCURACY OF THIS METHOD.

BY

LEONARD HILL, M.B., F.R.S. and MARTIN FLACK, B.A., B.M.Oxon.

The systolic pressure is usually obtained by means of the armlet or cuff independently invented by Riva Rocci and Hill and Barnard. The armlet may be used with a mercurial or spring manometer. The pressure is raised until the radial pulse is obliterated, the armlet being applied at the level of the heart to avoid the influence of the hydrostatic pressure of the column of blood in the body, and so obtain the true systolic pressure of the heart. One of us (L. H.) has perfected recently a form of sphygmometer which serves the same purpose as the armlet and mercurial manometer, is as accurate, far simpler and quicker in use, and can be carried in the waistcoat pocket. The instrument consists of a rubber bag, about 1½ in. in diameter, and enclosed in a silk cover, which is connected by a short length of tubing to a straight glass tube—the gauge. The gauge is carried in a case like that of a clinical thermometer. It consists of a tube open at one end and expanding into a small air space at the other end. Near the open end is a side hole. The closed end is formed of an inch of solid glass to hold the gauge by, so that the air space is not heated by the fingers. On placing the open end of the gauge in water the water rises up to the side hole and forms a meniscus there. This is the zero of the scale, the tube being graduated up to 250 mm. Hg. The tube of the bag is slipped over the open end so as to cover the side hole. The bag must not be blown out to distension, but be about two-thirds full of air. The subject is given the gauge to hold by its solid end; and the observer takes the wrist of the subject, places it at the heart level, and, covering the bag with his fingers and palm, presses it down over the radial artery, his thumb being behind the wrist. With the index finger of the other hand the observer keeps the radial obliterated to prevent a pulse re-entering from the anastomosis with the ulnar artery. With his second finger placed between the index and the bag he feels when the pulse is obliterated by the pressure of the bag, and then reads the position of the top of the meniscus in the gauge. The bag, being large, flaccid, and entirely enclosed by its silk cover and the fingers (its tube escapes between them), takes the place of the leather cuff and the bag of the armlet. Small unenclosed bags give untrustworthy readings, for part of the pressure applied goes in distorting the rubber bag, and is not transmitted to the artery. After use the fluid is jerked out of the gauge. Care must be taken on refilling that there is no water in the side hole, to prevent the meniscus rising. The side hole can easily be cleared by blowing into it, and the orifice of the tube can be cleared by the bristle of a nailbrush. The instrument is made by Mr. Hicks, 8, Hatton Garden, E.C.

Considerable doubt as to the accuracy of the obliteration method of measuring the systolic blood pressure has been expressed recently, particularly by Dr. William Russell.[1] It has been asserted that much of the pressure applied by the armlet method may go to compressing the stiff wall of a degenerated or contracted artery. Herringham and Womack have just published a series of observations in which they found that the resistance of the wall of the *post-mortem* brachial artery may vary from 4 to 34 mm. Hg. They say that the resistance does not vary with age; that at every age exceptional cases occur; that the extremes vary greatly and irregularly; that the two brachials may differ by as much as 10 mm. Hg. The same was found true of the carotids and iliacs. Their results, in our opinion, point to varying *post-mortem* contraction of the arteries as the cause of the resistance—*post-mortem* contraction which is excited by injury and relaxed by freezing, and has been so fully and ably studied by MacWilliam.[2] We have no right to assume that much *post-mortem* contraction occurs in the living artery. This contraction is the natural response to injury which causes the closure of cut and torn arteries. Moreover, it is a well-established fact that obliteration of a living artery excites it to relax, and thus renders error from the resistance due to a contracted state unlikely. We have tested the accuracy of the obliteration method on man in the two following ways, and both ways, as far as our tests go, show that the method is an accurate one.

I.—The Gravity Method.

It has been proved by Mummery and also by one of us (L. H.) that the obliteration pressure in the femoral of the dog is the same (within 1 or 2 mm. Hg) as the systolic pressure taken in the opposite femoral with a cannula and Hürthle manometer. It has been proved by one of us (L. H.) that in a dog placed in a vertical posture, head upwards, the pressure in the femoral artery is higher than in the carotid by the hydrostatic pressure of the column of blood which separates the two points of measurement, while, if the dog is turned head downwards, it is higher in the carotid than in the femoral by the same column of blood. The pressures were measured directly with cannulae and mercury manometers.

Carrying out similar observations on man with the aid of two armlets and two mercurial manometers, we obtained like results. It is very improbable that this would be the case if the resistance of the arterial wall entered into the readings, for the contraction of the arteries varies with the pressure they have to support and with the control of the vasomotor nerves, and both factors are modified very greatly by change of posture. In the case of sclerosed arteries, it is unlikely that any two of them would be degenerated and stiffened to a like extent.

On students we have placed one armlet round the upper arm and another round the calf, and used the pulse in the radial at the wrist and posterior tibial artery at the ankle as the index of obliteration. One of us controlled the pump and read the manometer, while the other felt both arteries and signalled the moments of obliteration. It is essential that the readings of the two arteries be taken together and not successively, to avoid errors arising from oscillations of pressure due to the varying attention or excitement of the subject.

We took the readings with the student (1) lying supine in the horizontal posture; (2) standing with the observed leg relaxed and the weight thrown on the other leg; (3) lying supine with the legs raised into the L-shaped position; (4) hoisted up by rope and pulley into the vertical head-down posture, the rope being attached round the foot of the leg which was not observed, and the observed leg attached to this leg by a bandage, so that the posterior tibial artery could be felt at the ankle.

The readings were taken both on raising and lowering the pressure repeatedly and the average taken.

Subject.	Posture.	Brachial Artery. Pressure in mm. Hg.	Posterior Tibial Artery. Pressure in mm. Hg.	Difference in mm. Hg.	Height of Column separating Armlets in cm.	Difference Calculated from Height of Column in mm. Hg.
H. H. R.	Horizontal	140	138	**2**	—	—
	Standing	136	204	**68**	89	**68.5**
	L posture, legs up	122	76	**46**	60	**46.1**
	Vertical head down	148	70	**78**	1010*	**77.7***
P. H. R.	Horizontal	126	126	—	—	—
	Standing	140	204	**64**	86	**66.1**
	L posture, legs up	132	78	**54**	65	**50.0**
	Vertical head down	116	42	**74**	91*	**70.0***

* The arm was not in quite the same position in regard to the heart level as in the standing posture. It had sunk headwards, so that the column of blood separating the two points of measurement was longer.

Considering the difficulty of reading sharply the return of the feeble posterior tibial pulse in the head-down posture, the agreement of the calculated and observed differences is astonishingly near. A most interesting point in these observations is the indication that they give that while the pressure which the heart has to overcome does not alter greatly, the pressure in the cerebral arteries is kept approximately the same in the horizontal, standing, and vertical head-down postures, in spite of the enormous differences in the effect of gravity.

Thus, in P. H. R. the pressure at heart-apex level was approximately 125 in the horizontal posture, 140 in the standing, and 110 in the vertical head-down posture. The vertical distance from base of brain to armlet in the standing posture was about equal to 20 mm. Hg; so that, deducting this amount, the pressure in the circle of Willis would be about 120 mm. Hg. In the vertical head-down posture the subject kept his head bent up somewhat, so that the vertical column separating armlet and base of brain was less—say, equal to 10 to 15 mm. Hg; and, adding this, the pressure in the circle of Willis would be about 120 mm. Hg. In the horizontal posture it was actually 126 mm. Hg. In the case of the arteries of the legs there was no such regulation. At the level of the calf the pressure was 126 in the horizontal, 204 in the standing, and 42 in the vertical posture. The regulative mechanisms engaged are (1) constriction of the arteries, (2) the output per minute of the heart, (3) support of the venous and capillary system by the muscles, (4) the respiratory pump. In the standing posture the pulse is more rapid, the arteries in the abdomen and limbs constricted, the skeletal muscles braced up, the respiratory pump more active.

In the case of patients with high arterial pressure we have applied the gravity method to the two brachials, one arm being held up and the other down, and the pressure read in two armlets at the same time.

In one case of aneurysm, the systolic pressure varied so much with successive beats that no good readings could be obtained.

Our second method, we think, proves with certainty the accuracy of the obliteration method. We have, it is true, up to now tried it in only a few cases, but we commend the trial of this method to those who wish to test the matter further on cases where readings are high and arteries thickened. We place one armlet round the

Case.	Difference in Height Measured equal to mm. in Hg.	Difference in Pressure Observed.	Arterial Pressure.
Sclerosis, anginal pain, emphysema	17.0	17.5	140
Chronic nephritis, thick arteries	10	10	185
Diabetes, small contracted arteries	15.2	15	175
Chronic nephritis, arterio-sclerosis	11.6	12	197
Paraplegia	11.55	11	175

Many experiments on healthy subjects gave the calculated readin within 0.2. mm. Hg.

brachial, and another narrower one round the forearm of the same arm. We find the obliteration pressure with the first armlet. Suppose it is 150 mm. Hg. We lower the pressure in this armlet to, say, 145 mm. Hg, so that the arterial blood can get through into the limb, but cannot get out of the veins of the limb until the pressure in the veins rises above 145 mm. Hg.

Allowing sufficient time for the veins to fill, we then measure the pressure in one of the superficial veins, and find that it does finally reach this pressure thus: We raise the pressure in the second armlet above 1.45 mm. Hg, and choosing a suitable vein above this armlet, by stroking, empty it upwards past the next valve, then quickly lowering the pressure in the second armlet observe the pressure at the moment when the vein fills from below. One of us watches the vein, and signals the moment of filling; the other the manometer. We repeat this observation several times. Now if we find the pressure in the vein reaches 145, we know that the obliteration pressure was correct within 5 mm. Hg, for no one can suggest that the wall of a superficial vein offers any noteworthy resistance; and as the venous pressure is found by the second armlet to be 145 mm. Hg, and equal to the pressure in the first armlet, and as the pressure in this is within 5 mm. Hg of the obliteration pressure, the latter is proved to be correct within 5 mm. Hg.

Subject.		Obliteration Pressure.	Pressure Maintained in Brachial Armlet.	Pressure Measured in Veins of Forearm.
G. T. ...	Sclerosed arteries	156	150	148
F. T., aged 59	—	122	110 114	110 114
G. ...	Pipe-like arteries full of plaques	136	120 130	118 176
G. M. ...	Hard arteries	148	142	140
T. C. ...	Granular kidneys, thickened tortuous arteries	194	184	100 First reading. 110 Second ,, 140 Third ,, 180 Final reading after waiting long enough for venous pressure to rise.
A. J. ...	Phthisis, tortuous arteries	(1) 106	100	40 First reading. 80 Second ,, 100 Final ,,
		(2) 106	95	36 First ,, 72 Second ,, 92 Final ,,
		(3) 106	100	40 First ,, 60 Second ,, 68 Third ,, 92 Fourth ,, 102 Final ,,

We have also tested the method on several normal men.

To carry out this method properly a vein must be chosen which does not fill from above, or, at any rate, not quickly. With such high pressures in the veins the valves

leak, and in some cases the leakage is such that we have not been able to carry out the method. A slender vein can generally be found which answers the purpose. The pressure in the second armlet must be lowered quickly directly the vein has been stroked empty, so that the filling of the vein from below may be observed before it can leak full from above.

In cases of high pressure it is difficult to get patients to endure long enough the somewhat painful feeling of pressure which results from the maintenance of the first armlet at a pressure close to the obliteration pressure. It is necessary to work quickly in these cases, and give a rest between each test.

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TREATMENT OF INOPERABLE CANCER BY HYPOCHLORITES.

BY JONATHAN E. A. G. BECKER, M.B., C.M.EDIN.,

LONDON, S.W.

DURING the past three or four years I have, when called upon to deal with cases of inoperable cancer, employed a method of treatment which is entirely novel so far as I am aware. The cases in which I have carried it out thoroughly are not numerous, and at present only the three recorded are of sufficiently old standing and sufficiently verified as regards diagnosis.

CASE I.

A woman employed as a cook in a large block of flats in London. In October, 1901, ovariotomy was performed on her at Guy's Hospital and the right ovary removed. Little relief from her previous symptoms resulted, and she continued to attend as an out-patient, the uterus being curetted on two or three occasions. As she continued to fail in health she was readmitted in November, 1902. On laparotomy a mass was found in the pelvis, suggesting a malignant growth with a secondary deposit in the omentum. No microscopic examination was made, but from the relations of the mass and its appearance it was concluded that it was a case of malignant disease. Consequently the abdomen was closed without further interference, and the patient discharged in February, 1903.

Ten months later, or in December, 1903, the special treatment in question was commenced. By May, 1904, five months later, the patient was so far recovered that she was able to do all her household work and to go out bicycling, riding as far as thirty-five miles in a day. In appearance and feeling she was perfectly well. Nevertheless, the treatment was continued for several months longer. At the date of writing, four years later, this patient is still in good health and earning her living by her own exertions.

CASE II.

A woman who had a radical operation for mammary carcinoma at Guy's Hospital in March, 1907; the diagnosis of cancer was verified by microscopic examination. Two months after she had been discharged, some enlarged glands were noticed on the left side of the neck, and these were removed surgically at the Soho Hospital for Women. Again, two months later, further growth was observed in the same locality, whereon the special treatment was commenced. In two months' time the growth had disappeared, and at the time of writing, eighteen months later, she is in absolutely good health, feeling well, taking active exercise, and pursuing her ordinary occupation—that of a school teacher.

CASE III.

A French gentleman, who, through a bicycle accident, received a blow on the right breast. A tumour formed, and was diagnosed in May, 1904, as a malignant growth. In consequence a radical operation was performed at King's College Hospital in the same month, the growth, on microscopic examination, being found to be a spheroidal celled carcinoma. The patient was seen now and then by his surgeon, and in 1906, though the cicatrix seemed in good order, the conclusion was reached by this surgeon that there was a secondary and inoperable growth in the sternum itself. Subsequently the patient had *x* rays applied a few times and received some injections of what was probably a culture of *M. neoformans*.

Finally, in November, 1907, he placed himself in the hands of the writer of this note, who commenced the special treatment in question. It was continued until May, 1908, at which date all evidence of new growth had disappeared, and the patient was apparently in perfect health, locally and generally. That is still the position at the date of writing, eight months later.

In describing these cases it has not been thought necessary to enter into finer details of their clinical course, but their more essential features are all duly recorded. It is conceivable, of course, that in Case I the growths seen and deemed by the operator to be malignant and inoperable may have been tuberculous. Such cases do occur, but it would be a strange coincidence if one followed a previous operation for cystic disease of the ovary. In the other two cases the initial disease was verified microscopically, and, as in the first case, the recurrences were deemed by surgeons holding positions on the senior staff of important London hospitals to be malignant.

I propose to report the conditions of these three patients again a year hence, whatever it may be.

The treatment employed was the injection of a solution of hypochlorites of potassium and sodium. This I prepare by dissolving 5 grams of KOH and 4 grams of NaOH in a litre of distilled water, and passing it through washed chlorine gas. Of this solution, 1½ to 2 c.cm. were injected daily for a varying period, usually under the skin over the deltoid muscle or over the great trochanter, so that the solution might enter the system at a site in the general neighbourhood of the lymphatic glands. The growth itself and the skin over it were carefully avoided. So, too, was the use of alcohol during treatment. I use an ordinary all-glass syringe with a platinum needle (to avoid corrosion), and in making the injections adopt ordinary aseptic precautions. There is a varying amount of local pain, lasting for from two to five minutes. I have not seen any reaction.

Should any medical reader care to try the treatment and desire further details, they are, of course, at his disposition.

THE TREATMENT OF CANCER WITH COCAINE.

BY ROBERT MUNN GILCHRIST,

BOLTON, LANCS.

THE first time I used cocaine in the treatment of cancer was as a local application in a very painful secondary case, the primary growth having been removed a few weeks before by the late Dr. McGill of Leeds. On its recurrence, I saw Dr. McGill along with my patient, and he at once came to the conclusion that further operation was out of the question. This was a very instructive case, as, being on the face, you could watch the progress of the growth under varying forms of treatment.

Before the use of cocaine, from the first indication of a fresh deposit until ulceration occurred was a period of about three days, but after the use of cocaine this period was lengthened to as many weeks, thus showing that cocaine had some influence in retarding the growth.

In July, 1891, discussing with my late friend, Dr. Calderwood, "the Mattei treatment of cancer," I said that the only agent I had ever used having any effect on the growth of abnormal epithelial tissue was cocaine, and having a very suitable case under my care at the time, I determined to try the effect of the internal administration of cocaine.

CASE I.

Mrs. C. was 49, and almost *in articulo mortis*. Extreme anorexia, probably from secondary deposits in stomach and liver in this a case of uterine cancer, had brought her into this condition. Having an idiosyncrasy to opiates, whichever way administered, made this case not a very easy one to treat, especially as she was suffering very much pain. I commenced the treatment with cocaine by giving her one-eighth of a grain every three hours, and gradually increasing it to one-quarter of a grain. The growth in this case occupied almost the whole of the vagina, and involved both bladder and rectum. She had excruciating pain, retention of urine, general anasarca with albuminuria, and most alarming attacks of haemorrhage. The effect of the administration of cocaine was most marked and immediate. The haemorrhage became less and less, the pain was very much relieved, the anasarca and albuminuria disappeared, sickness stopped, and she again began to take her food with relish.

She continued to improve for six months, when, being much upset by her husband, she had an attack of meningitis, from which she died.

CASE II.

Miss W. consulted me about her breast in May, 1891. I found a growth involving the whole of the left breast, and enlargement and induration of the axillary glands. The skin over the breast was becoming affected, and I advised immediate removal. To this she would not consent. I then commenced treatment by administering cocaine both internally and externally. The pain, which had been the most important factor, became to all intents and purposes a negligible quantity. The skin broke down in many places over the breast, but healed. The growth seemed to remain in a stationary condition, and the glands in the armpit, if anything, became smaller. She continued in

this way without any material change until December, 1892, when she died from an acute attack of phthisis.

CASE III.

Mrs. H., aged 52, came to me in July, 1891, with cancer involving the whole of the uterus. Her chief symptoms were pain and haemorrhage. The general condition of this patient was very bad, as she had suffered for years from a large number of chronic ulcers on the legs. Here I again administered cocaine, with the result that the haemorrhage at once ceased and the pain became a very unimportant factor. She improved very much constitutionally, and was able to walk a mile from home a week before her death, which took place in April, 1892, from obstruction of the bowels. She would not consent to operation.

CASE IV.

N. C., aged 38, came under my care in November, 1891. I found a growth involving the entire lumen of the rectum. He had great pain and difficulty in passing his stools, which act was always accompanied more or less with haemorrhage. He continued under my treatment for about ten months, during which time he gained slightly in weight, and had very little pain. The haemorrhage ceased, and the growth seemed to be stationary, as also to become more regular in outline to the touch. Because I could not promise him a definite cure he placed himself in the hands of a quack. He quickly got worse and died.

CASE V.

Mrs. M., aged 50, had cancer in the left breast. The growth was about the size of a pigeon's egg, and the skin was adherent to it. The nipple was retracted, and the axillary glands hard and enlarged. She commenced taking cocaine in September, 1892, and continued until July, 1893, when I amputated the breast and excised the glands. During the six months she was taking the cocaine the growth seemed sometimes to be a little smaller, sometimes a little larger—in fact, correspondingly as she took the cocaine. I have lost sight of this case.

CASE VI.

Mrs. B., aged 47—a case of uterine cancer—came under my care when in a very advanced state. She was shrunk and shrivelled, and had most marked cachexia. In this case also the haemorrhage ceased, and the pain was very much alleviated. She died after ten months' treatment.

CASE VII.

Mrs. W., aged 43, came to me in April, 1892, with advanced cancer of the left breast. She had very large breasts. The growth involved the entire breast; the skin was affected, and the glandular enlargements in the axilla were very marked. This case improved less than any other in which I have administered cocaine, and she died in October, 1892. The treatment at first seemed to stay the growth; but sloughing commenced, and, if there was any peculiarity, it was the size of the sloughs that kept coming away.

CASE VIII.

Mrs. E., aged 43—another case of advanced uterine cancer—came under my care in August, 1893. Here again the cocaine has controlled the haemorrhage, and there is no other symptom of the growth present besides a sensation of weight. The more cocaine she takes the better she is, and she is performing her household duties.

CASE IX.

Mr. W. This was a case of some malignant disease involving the pyloric end of the stomach. Opiates failed to give any relief to his suffering, so I administered cocaine, from which he had considerable benefit. He died suddenly after three or four months' treatment.

CASE X.

Mrs. B., aged 47, had considerable swelling in the right breast, with enlargement of axillary glands. She had the usual pains. After four months' treatment the enlargements have entirely disappeared, and she is now in her usual health.

CASE XI.

Mrs. C., aged 42, had also swelling in the right breast, with pain and enlargement of axillary glands. After two months' treatment the breast has returned to its normal condition, and she is now in her usual health.

CASE XII.

Mrs. R., aged 37. A similar case to Case XI. Here again the symptoms have disappeared under treatment.

CASE XIII.

Miss H., aged 35, had swelling in the left breast, with pain and enlargement of axillary glands. Under treatment with cocaine all the symptoms have disappeared, and she is now in her usual health. The mother of this patient died some years ago from cancer.

CASE XIV.

Mr. B., aged 50. Seven years ago I removed an epithelioma from his lower lip. Some months ago he consulted me as regards a whitish-looking blister which had come on the site of the cicatrix. I gave him cocaine both internally and externally, and the lip has resumed its normal appearance.

In all these cases the administration was followed by benefit.

1. In every case the general constitutional condition of the patient was very much improved, even if that was only for a time.

2. From the observations I have made in these cases, I consider, so far as the relief of pain is concerned, that cocaine stands unrivalled, for while easing, or altogether taking away pain, we have none of the objectionable conditions which opiates produce.

3. In every case of uterine cancer where haemorrhage was a prominent symptom the administration of cocaine was followed by immediate benefit; either stopping the flooding entirely or leaving only at intervals a show.

As to the *modus operandi* of the drug I offer no opinion. The cases cited show the general improvement in health, the relief of pain, and the power of controlling haemorrhage. Whether it has any power over, or effect on, the embryonic epithelial cell, whereby a malignant is converted into a benign tissue, or whether its action is on the nerve terminals, or whether it is only by its powerful stimulating action generally, that cocaine has any control over the symptoms mentioned I do not know, but I know that patients suffering from cancer bear larger doses of cocaine with impunity than is generally understood, looking as if there was some natural affinity between the one and the other.

If a patient came to me suffering from a growth in which the diagnosis was doubtful, I would administer cocaine, and if there was then no improvement I could almost certainly say the growth was not malignant. So that I consider cocaine also a valuable diagnostic agent.

Reverting again to the cases mentioned, I may say that I cannot trace Nos. 5 and 8; No. 10 died last year from bronchitis, and Nos. 11, 12, 13, and 14 are still living and have not had any recurrence of the disease.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CANCER HOUSE.

IT appears to me that the following facts may be of some interest to your readers.

Some short time ago a man came into my consulting room one evening. He had tuberculous glands in his neck, and in trying to elicit a family history he gave me the following remarkable and interesting account.

His family lived on a farm in Glamorganshire. The house is old, and at one time had been of considerable size, and occupied by the agent of the property on which it was built. Latterly this house had been divided into two smaller houses by a partition wall, each house being occupied by a family of farmers, who were not related to one another—the T.'s, my patient's family, on one side, the R.'s on the other.

Mary T., the farmer's wife, suffered from cancer of the stomach, from which she died at the age of 76 in 1882.

Her daughter-in-law, Emma T., lived in a farm near by, and who nursed her in her illness, moved with her family into the house on the old woman's death. She was operated on for cancer of the breast in 1886, which recurred, and from which she died in 1890 at the age of 49.

Her daughter, Edith T., nursed her mother in her last illness, and she in turn developed cancer of the breast, which returned after operation, and she died from the recurrence in 1896 at the age of 32.

Edith T. was nursed in her last illness by Mrs. R., who lived in the other half of the divided house. Mrs. R. died in 1900, aged 68, from cancer of the breast.

Her husband's nephew, David R., came to live at the farm after Mrs. R.'s death, and he died there in 1903, at the age of 32, from cancer of the throat.

We have here a series of 5 fatal cases of cancer under one roof, if not actually in one house, in a period of twenty-one years, and only two of these persons were blood relations—Emma and Edith T., mother and daughter.

It seems there is something more than coincidence here, and that probably there are predisposing, if not determining, factors to be found in the house and its surroundings. The house is built on the side of a stream that courses down the valley. The stream, which is often swollen with floods, is not sluggish, but the subsoil is always saturated with moisture. The valley is thickly wooded, and many trees are affected with arboreal

tumours, one tree, an ash, close to the house, being much disfigured by these bosses.

Mr. Keith W. Monsarrat, in the *Medical Annual* for 1899 and 1900, summarizes the views of Havilland, Noël, Fiessinger, Lloyd-Jones, and others, that cancer is most prevalent in low-lying districts, near rivers which are liable to floods, and that proximity to trees is connected in some way with the prevalence of the disease. The connexion between the prevalence of cancer and the prevalence of arboreal tumours has also been noted by many observers. These vegetable tumours are apparently contagious, as several usually exist on neighbouring trees, and it is supposed that the infection is borne from tree to tree by insects.

ROBERT J. SIMONS, M.R.C.S., L.R.C.P.

Bridgend, Glamorgan.

RUPTURE OF THE VENTRICLE.

I WAS called to see a man, aged 80, who had been found dead in bed. He had been quite well previously, and had been heard moving about half an hour before he was found. There were no signs of any struggle.

At the *post-mortem* examination the pericardium was found to contain 4 oz. of fluid blood and 8 oz. of clot. The heart weighed 20 oz. On the front of the left ventricle was a zigzag rupture, ¾ in. long, communicating with the interior of the ventricle. All the valves were atheromatous, especially the aortic and mitral. There were large calcareous plaques in the aortic valve. The heart muscle was hypertrophied and showed extensive fatty degeneration. The coronary arteries were normal. The aorta and large vessels were atheromatous and calcified. The right pleura was adherent all round and the left pleura at the apex. The right lung weighed 2 lb. 1 oz., and contained a small old tuberculous focus at the apex. The left lung weighed 1 lb. 13 oz., and had a large calcified tuberculous nodule at apex. There were evidences of bronchitis and oedema throughout both lungs. The liver weighed 3 lb. 13 oz. and was fatty. The spleen was very hard and weighed 8½ oz. The kidneys weighed 6½ oz. each and showed chronic nephritis, with diminution of cortex and cysts both on the surface and internally. The capsule stripped easily. The bladder was in a condition of chronic cystitis, and the prostate was enlarged and cystic. The brain weighed 2 lb. 12 oz. The dura mater was very adherent to the bone. The basilar and other arteries showed marked atheroma.

Death was due to rupture of the ventricle, probably the result of some strain, such as coughing. I believe spontaneous rupture of the ventricle is a very uncommon condition.

London, N. SIDNEY F. FOURACRE, L.S.A.

A CASE OF FOREIGN BODY IN THE PLEURAL SAC.

THE patient in the following case was a baby of 8 months, which when I first saw it on August 4th presented all the phenomena of severe right-side pneumonia, and in addition an incessant short cough.

Progress.—During the next few days its condition oscillated, and on the 9th I found evidence of pus in the right pleura, though much of the dyspnoea was gone. As I was going away early next day, I asked my locumtenent to place the case first on his list and visit it, prepared to operate if need be.

Treatment.—This he did, and, my partner, Dr. H. W. Garden, administering chloroform, incised the swelling which I had located and let out a little very fetid pus. A drainage tube was inserted and kept in till August 22nd, the child meantime improving somewhat. Three days later, having returned home, I reassumed charge of the case. I found the orifice of the sinus inflamed, the surrounding tissue oedematous, and a little non-offensive pus exuding. On passing a probe a spot was felt which suggested bare bone, but did not feel quite like it.

Result.—About a week later, during which the child's condition improved somewhat, I noticed, when about to dress the case, a little brown spot in the wound not larger than the point of a blunt pin. I seized it with forceps and drew out a body about 1½ in. long and as thick as the lead pencil supplied with pocket-books. It was soaked with pus, and a little offensive. After carefully washing it I thought at first it was a piece of a sweeping broom, but on more minute examination I recognized it to be a spike of the common meadow barley, *Hordeum pratense*. The spike was quite perfect. The next day the child was vastly better, the wound had taken on a healthy appearance, and in ten days the wound was healed and the child quite well.

REMARKS.—It seems incredible that a baby of this age could have sucked a body of the size and shape stated into its larynx, and that this should have passed down the right bronchus, worked its way through the base of the lung, and finally into the pleura, whence it was removed through the chest wall. On the other hand, if the body were swallowed and passed up from the stomach through the diaphragm into the pleural cavity, the dyspnoea, stridor, and symptoms of pneumonia could not be explained. The mother could throw no light on the affair. One whole day the child had been out of her sight and in the care of a neighbour, but this woman denied having given the baby any grass stalks to play with, and I could elicit no history of sudden spasm or partial asphyxiation, such as one would expect to occur when the foreign body passed the epiglottis.

Chadwell Heath. T. REUELL ATKINSON, M.D.Durh.

VARICELLA AND HENOCH'S PURPURA.

THE two following cases exemplify certain morbid relations:

CASE I.—In December, 1907, D. B., a girl of 7, recovering from varicella, began to suffer from pain and swelling in the larger joints. Salicylate of sodium was prescribed, and in two days these symptoms abated, to give place to vomiting and abdominal pain, tenderness, and distension. Treatment gave little relief until, after several days, blood began to appear in the evacuations. The heart was now found to be affected, and exocardial and endocardial murmurs were audible at base and apex. Coincidently there was a return of arthritic pain, and about wrists and ankles appeared an eruption of purpuric spots. There was no renal nor other complication. Recovery was slow, and a cardiac bruit persists. The child was fair, of delicate appearance, defective teeth, motherless from early infancy, without evidence of past tuberculosis, but exhibiting in her stature and gait (congenital) dislocation of both hips, a state confirmed by skiagram.

CASE II.—A. W., a boy of 2½ years, had pertussis and bronchopneumonia in March, 1908, and by June had only partially recovered, when he, with other members of the family, were attacked by varicella. The lesions were of the usual distribution, the severest those on the belly, where an intense red aureola surrounded each, and where into each vesicle haemorrhage had obviously taken place. Above the knees and on the arms were several subcutaneous ecchymoses. The boy was very sick and in constant gastric pain. The abdomen became swollen; the surface around the varicella lesions oedematous, tender to palpation. An intestinal haemorrhage was predicated; it appeared after several days of constipation. The vesicles soon began to slough, and so deeply as to expose the muscles—varicella gangrenosa. Haemorrhage ceased; the abdomen, however, continued to be swollen, the inguinal glands enlarged, and when the boy was well enough to run about, and the family removed to another town, he still presented the picture of tuberculous peritonitis. This patient had not been vaccinated, as his mother attributed the death of an earlier child to the severity of vaccinia.

REMARKS.—The two cases illustrate the play of related morbid processes—the infective and the rheumatic, the rheumatic and purpuric, purpuric and tuberculous.

Clifton. DAVID A. ALEXANDER, M.B.

THE TREATMENT OF CHILBLAINS BY PEROXIDE OF HYDROGEN.

SINCE 1903, when Dr. Norman Walker quoted Courtin of Bordeaux (in the *Medical Annual*) as originating this treatment, I have frequently employed it, and have been greatly pleased by its almost unvarying success. My plan is for the patient to bathe the affected parts in peroxide of hydrogen (10 vol. strength), diluted with equal parts of previously boiled water, still hot, for fifteen or twenty minutes, twice daily. This treatment has the additional advantage of being capable of being carried out even if the chilblains are cracked and ulcerated, though it is well to diminish the strength of the peroxide if much pain and irritation is produced by the application. A continuation of this treatment for two or three days in most cases will effect a cure.

Lincoln. E. MANSEL SYMPSON, M.D.

DIACHYLON AS AN ABORTIFACIENT.

DR. EDMUND HAY'S interesting memorandum in the JOURNAL of January 23rd, p. 214, giving an account of three cases of plumbism due to the taking of diachylon to procure abortion, calls attention to the somewhat curious fact that hitherto London seems to have escaped this evil, which has spread so widely in the populous centres of the Midlands. Thanks to one or two sentences of hard labour upon midwives, who were proved to have sold these "diachylon pills" for improper purposes, there appear to be somewhat fewer cases in the districts about here. Cases still, however, occur from time to time. Only last month I saw one which ended disastrously. Its history is briefly as follows:

A young single woman, aged 23, the daughter of highly respectable parents living near Sheffield, was brought to my consulting rooms by her parents, on account of great weakness and very severe headache. She looked extremely anaemic and very ill. On examining her chest, I found the breasts full and tense, with a small quantity of secretion from the nipples on pressure. Further investigation showed the uterus reaching to the umbilicus. An amenorrhoea of about six months was admitted. On looking at the gums, I found a deep blue-black border. Everything was denied by the patient herself, both the possible pregnancy and the taking of diachylon. However, I pointed out to her parents the gravity of the symptoms, sent them back home, and urged them to call in their own medical man at once. I wrote to him explaining the position of things, and two days later I received from him a letter, saying that he had been hastily summoned to the patient the day before to find she had been delivered of a dead fetus whilst at stool. Unfortunately that is not the worst. One month later he telephoned, asking me to go over at once and see the girl with him. She was then in the last stage of cardiac failure secondary to subacute nephritis. The headache had been agonizing. There was double optic neuritis, with extensive haemorrhagic retinitis; vision almost gone; the blue line was still very marked, and she was in extreme distress from dyspnoea. In fact, her condition was quite hopeless.

It seems that she had suffered from albuminuria for some years previously, so that the effect of the diachylon on the already impaired kidneys was doubly severe.

With cases such as the above coming under observation, it does seem that some steps should be taken to put a stop to this evil. So far it has been found impossible to move the authorities in the matter. In spite of much trouble and many meetings, with strong resolutions passed, urging the desirability of putting diachylon on the poisons schedule (as is ergot), we were informed that, acting upon "expert" advice, they considered that it was unnecessary. I can only say, "*Ne crede Experto!*"

I am satisfied that by the simple procedure of putting diachylon on the poisons schedule nobody would be the loser, and on the other hand the evil we suffer from would soon die out, at any rate in its present form.

As it is, no respectable chemist in the affected districts sells diachylon without pointing out its dangers, and the disreputable people who trade in it, knowing the purpose for which it is being purchased, require checking. By scheduling it as a poison such a check would be provided.

Should this scourge extend largely in London it is possible that adequate pressure may be brought to bear upon the authorities to do something; hitherto, the provinces have failed to stir them.

Sheffield. ARTHUR J. HALL, M.D., F.R.C.P.

A METHOD OF TREATING EXCESSIVE AXILLARY SWEATING BY OPERATION.

THIS condition is very common and is a source of very great discomfort to those who have to work in hot climates, wearing tight clothing.

About three years ago an army surgeon was unfortunate enough to contract septicaemia while operating, and eventually had to suffer extensive loss of his left axillary glands. Owing to sinuses it was necessary to excise a large portion of skin, and when he recovered he noticed that he no longer sweated from this axilla. Investigation showed that the whole of the hair-bearing skin of the axilla had been removed, and with it the large sweat glands as well.

The contrast to the other axilla was so great that, being under orders for service on the West Coast of Africa, he determined to have something of the same kind done to the right axilla. Under eucaine and adrenalin the whole of the hair-bearing skin was excised, and now he has two non-sweating axillae.

The operation is very simple, quite painless, does not entail opening the axilla, and is free from risk. If careful suturing is carried out the incision heals by first intention, and the arm can be used in a week or sooner if necessary. This may appear rather a drastic method of treating hyperidrosis, but it is satisfactory and radical. Ordinary measures were quite useless, and the officer now regrets that he did not know of this method of cure before.

F. J. W. PORTER,
Colchester. Major, R.A.M.C.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, January 25th, 1909.

CHARLES BARRETT LOCKWOOD, F.R.C.S., President, in the Chair.

Wertheim's Operation.

DR. COMYNS BERKELEY read a paper on the radical abdominal operation for cancer of the cervix by Wertheim's method. Wertheim modified the original operation by clamping forceps across the vagina before he divided this structure, and since he had performed the radical abdominal operation more consistently and in a larger number of cases than any one else, this operation had, at any rate in England, been attributed to him. Dr. Berkeley had collected full statistics of 229 cases of the true Wertheim operation from different operators in the United Kingdom. He pointed out that Wertheim's operation had a great advantage over simple vaginal hysterectomy both in its percentage operability and percentage of cures, whilst if only similar cases were taken there was not much difference between the primary mortality. The primary mortality for simple vaginal hysterectomy with Continental operators was on an average about 9 per cent. Doderlein gave a table of 4,368 vaginal hysterectomies with a mortality of 9.1 per cent. The mortality for Wertheim's operation in early cases worked out at 6.8 per cent., in moderate cases 8 per cent., and in advanced cases 26.7 per cent. The mortality of the 229 Wertheims which he had collected was 18.3 per cent., the mortality of his own cases was 16.6, of Wertheim's 458 cases 15.2. The primary mortality, taking all the cases, was high, but the statistics showed that this death-rate was considerably lowered with the increased experience of the operator; in Wertheim's first 30 it was 40 per cent., in his last 30, 7 per cent. The high mortality when compared with simple vaginal hysterectomy was entirely due to the fact that cases of a much more advanced nature could be operated upon with safety by Wertheim's method. The percentage operability of vaginal hysterectomy was about 12. In comparison with this a large number of operators had a percentage operability of 40 and over. He (Dr. Berkeley) and Dr. Bonney had kept careful record of all cases of cancer since they commenced operating by Wertheim's method, and their percentage operability to date was 67. Although vaginal hysterectomy might have a low primary mortality, the after-results of this operation were disappointing. Waldstein out of 274 cases had 4 living after five years, and the statistics of other operators gave similar results. As the Wertheim operation had only been performed in England, with the exception of a case by Wallace in 1903 and one by Spencer in 1904, since 1905, the statistics as to the percentage of cures were at present of no use, as five years was regarded as the shortest limit for that purpose. Of 200 cases that Wertheim had operated upon more than five years ago, 138 were still living, a percentage of 62. Polosson had 60 per cent. and Bumm 30 per cent. living free from recurrence after five years. That increased percentage of cures was due to two factors. By Wertheim's method the parametrium and cellular tissue could be removed, whereas in vaginal hysterectomy it had to be left behind, and Wertheim's clamps prevented local cell implantation. Dr. Berkeley discussed the pathological findings of the parametrium and cellular tissue in cases of cancer of the cervix, and showed that it was infected with cancer in 60 per cent. of the cases. He also discussed the question of local recurrence and cell implantation, and showed that by the extended abdominal operation local recurrence was rare. In comparing the operation of paravaginal section with Wertheim's operation, Dr. Berkeley

thought the chief decision as to which was the best method must rest upon the question whether it was necessary in Wertheim's operation to remove the regional glands. If the glands that could be surgically removed were diseased, in a large number of cases those which could not be removed were also diseased, and many operators said that for that reason it was useless removing any glands, and in favour of that contention was the fact that glandular infection was not present in probably more than one-third of the cases. Some statistics from the Middlesex Hospital Cancer Investigation Laboratories strikingly illustrated that point. Supposing there were no need to remove the glands, then the advocates of paravaginal section contended that by that operation just as much parametrium and cellular tissue could be removed without so much danger to the patient. In Shauta's hands, who had probably had more experience of that operation than anyone else, the results were good, the total mortality for 258 cases being 10.8, and in 79 early cases 3.7. His percentage of cures over five years had been 55, and his percentage operability had been nearly as great as those who operated through the abdomen. Dr. Berkeley showed a special pair of clamps which entirely overcame the difficulties and dangers associated with Wertheim's clamps. He also showed 27 of the 30 specimens that he and Dr. Bonney had removed.

Dr. SPENCER thought the authors had not fully stated the low mortality of vaginal hysterectomy. Some operators had had a lower mortality from vaginal hysterectomy than that stated in the paper. The most terrible thing about the operation was the high mortality —Wertheim's first 200 cases showed a mortality of 24½ per cent., and in the 400 9½ per cent. After vaginal hysterectomy the mortality was not more than 4 per cent. or 5 per cent. It was a very serious thing to submit a patient with early cancer to such a formidable operation. One great drawback of the operation was that the woman was unfit afterwards for intercourse, whereas, after vaginal hysterectomy, she could not only continue to have connexion, but her feelings were retained. He criticized the method of rendering hospital operability statistics. A fairer method would be to state the total hospital statistics. It would be interesting to see what would be the result in the patients mentioned in the paper after an interval of five years.

Dr. MCCANN thought the future of the operation lay in its application to early cases. He had great doubts whether that or any operation was of value in advanced cases. At first he did the operation only on advanced ceses, and the cases recurred rapidly. If the operation were applied to early cases he believed the mortality would be as low as that of vaginal hysterectomy. A very important point was ensuring haemostasis and careful covering of the surfaces of the peritoneum. If those matters were not carefully attended to there was likely to be subsequent infection. If they were attended to, even if the bladder leaked or there was a rectal fistula, the patient might survive. It was his practice to keep the patient in the Trendelenburg posture for as short a time as possible, examining the patient's pelvic organs before having her put into that position. He agreed with Dr. Spencer that the present method of rendering percentages of operability was absurd. Where the bladder was involved the operation was not justifiable, in his opinion. He had never kept a drain in longer than forty-eight hours, and if haemostasis was sufficiently established it was not necessary to put in a drain at all. If the bladder was regularly emptied after the operation cystitis would rarely occur.

Dr. LEWERS was very firmly convinced of the value of the operation, and that it would be the operation not only for cancer of the cervix, but also for the body of the uterus in the future. Up to the present he had done the operation twenty-two times. Out of his first ten he lost four, but in the second ten none at all. In all the cases in which he did it the condition of cancer was advanced. In the majority of the cases he thought the operation must be commenced as an exploratory laparotomy, because in some it was not possible to go on to finish the operation.

Dr. RUSSELL ANDREWS said his experience was very similar to that of Dr. Lewers. He had had very few opportunities of dealing with early cases. He believed the mortality from the operation, when it was properly understood, should not be higher than from vaginal hysterectomy.

The meeting concluded at a late hour with the reading of a paper by Mr. W. F. BROOK (Swansea), entitled, "A preliminary note on the relationship of delayed union in fractures to deficiency of calcium salts in the blood."

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Friday, January 8th, 1909.

JOHN LENTAIGNE, P.R.C.S.I., President, in the Chair.

Extroversion of the Bladder.

MR. C. ARTHUR BALL, in a paper on the treatment of extroversion of the bladder, expressed an opinion that the safest and most satisfactory procedure was the transplantation of the ureters into the rectum by an extraperitoneal operation, and gave a lantern demonstration of a case in which the operation had been carried out in a boy aged 5 years. The child was operated on last July, and the result was satisfactory, the child being in perfect health six months later, and having very fair powers of retaining urine in the rectum. Three months after the operation urine could be retained up to three and a half hours, and this control had continued to improve since then. The PRESIDENT said the case was, so far as he knew, the first satisfactory one that had been done in Dublin, and illustrated the improvement which had been effected in dealing with an apparently hopeless condition. He desired to know whether it had been proposed to infold the rectum at the point where the ureter entered it, so as to make it less likely to slip out, and give a broader field for adhesion on the part of the ureter. Mr. SETON PRINGLE asked if there was any trouble in keeping the peritoneum back, and in seeing what was being done. Mr. BALL, in reply, said he did not think infolding of the rectum had been done. In his case there seemed to be no tendency to slip out. He did not see the peritoneum until he first came on the rectum. One would have expected it to get in the way sooner that it did. There was considerable separation of the pubic bones, and the pelvic cavity was consequently very shallow, so that the case was ideally arranged for the surgical procedure carried out.

Abscess of the Pancreas.

Mr. SETON PRINGLE gave an account of the case of a patient, aged 46, with a marked alcoholic history, who was admitted to hospital on the twelfth day of his illness with signs of peritonitis of the upper abdomen, where a large tumour mass could be felt. Operation was performed immediately, and a large abscess found in the lesser peritoneal sac; the edges of the opening into the abscess were sutured to the parietal peritoneum and a large drainage tube inserted. There were numerous patches of fat necrosis in the omentum, and a small quantity of bloody fluid in the larger sac of peritoneum. The patient progressed favourably for a few days, but gradually lost strength and died on the twelfth day after operation. The urine several days after operation gave a marked Cammidge "C. reaction." At the *post-mortem* examination it was found that the head and body of the pancreas had sloughed, only the tail surviving; no gall stones were discovered. He considered that the pancreatitis in his patient was the result of alcoholic gastro-duodenal catarrh. Only some 16 cases of operation for pancreatic abscess had been recorded. The PRESIDENT said that cases of comparatively newly-recognized diseases, the symptoms of which were most obscure, were just such as should be brought forward in detail as by Mr. Pringle. The case showed the importance of early operation. If the abdomen had been opened at an early stage it was possible that the gangrene might have been averted; at any rate, it would have been more hopeful. It was only by the bringing forward of such cases that they would be able to arrive at an early diagnosis. Mr. STOKES said he had seen a similar case operated on a couple years ago, in which acute septic peritonitis was found at the *post-mortem* examination. But for that the case might have pulled through. The question of draining behind had been raised, but the Americans had given that up unless the inflammation were confined to the tail of the pancreas. Mr. BALL suggested that the apparently greater frequency of the disease in hospital patients than in private patients might arise from differences of habits in eating and drinking.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

AT a meeting on January 26th, Sir LAUDER BRUNTON, F.R.S., in the chair, a discussion on *Ulcerative colitis* was opened by Sir WILLIAM ALLCHIN, who, after referring to the comparative infrequency of the condition, its age and sex incidence, alluded to 177 cases collected from the case records of three of the larger general hospitals in London. He then referred to the influence, if any, of previous residence in a warm climate, with especial reference to the form of sporadic ulcerative colitis usually classed as dysentery, and to its relation with chronic interstitial nephritis. He next gave an account of the clinical features of the disease, its duration, liability to relapse, and event. The mortality was distinctly higher than in tropical dysentery, but the prognosis in any particular case was very uncertain. The *post-mortem* appearances were described. The influence of one or other form of *Bacillus dysenteriae* was discussed, the speaker maintaining that the evidence was adverse to the microbic identity of the sporadic and epidemic disease. The causative influence of tissue vulnerability in certain cases was referred to, and lastly the methods of treatment—medicinal, by enemata, surgical operation, or by the use of serums and vaccines. Mr. MAKINS, referring to its surgical treatment, argued for a simple colostomy, preferably in the ascending colon. Appendicostomy not diverting the intestinal contents was much less useful. Of 6 cases in which he had done colostomy, only 1 was really cured, but only 1 died. The contraction of the bowel after colostomy for ulcerative colitis was, however, a much more serious matter than after that performed for other conditions. If the artificial anus were left open more than seven or eight months, the re-establishment of the normal channel was a very difficult matter; indeed in some instances it was necessary to maintain the artificial opening for life. Dr. HALE WHITE thought ulcerative colitis quite distinct from tropical dysentery. As to its identity with asylum dysentery he thought the matter was not proven, and he pointed out that its prevalence was much greater than in institutions other than asylums, suggesting that some influence of the nervous system was involved. Reference was made to the causation of ulcerative colitis by the bursting of a liver abscess into the intestine. He likewise condemned short-circuiting in operative treatment and could not speak favourably of rectal irrigation or the use of drugs. Three cases had come under his notice during the last year that had apparently recovered under the use of a coli vaccine and artificially soured milk. The discussion was then adjourned until February 10th at 5.30 p.m.

SECTION OF ANAESTHETICS.

At a meeting on January 20th, the bill by which it is proposed to control the administration of anaesthetics (see SUPPLEMENT, BRITISH MEDICAL JOURNAL, December 5th, 1908, p. 302), was discussed, Dr. DUDLEY BUXTON proposing that Clauses I, IV and V, be approved, and also Clause III if amended so as to read:

> This Act shall not apply to any person registered under the Dentists Act, 1878, who shall administer nitrous oxide gas with the object of producing a state of unconsciousness during any dental operation, act, or procedure.

Dentists, he said, always had been recognized as proper persons to administer nitrous oxide gas, and this right should not be taken from them; but that they should be prohibited from administering the more dangerous anaesthetics unless they possessed a medical qualification in addition to their dental one. Mr. ROWLAND COLLUM said that the amendment proposed was essential in order to make the bill fair; for, by another clause, dental students were to be forced to receive thorough theoretical and practical instruction in anaesthetics; and yet by this clause, unless amended, they would be liable to a fine if they ever administered one afterwards. Dr. SILK opposed the whole bill on the ground that legislation was not the proper way to bring about the required result. The House of Commons would never pass such a bill. Dr. HEWITT said the safety of the patient should be the first consideration of every medical man. It was not right that a dentist should be permitted to administer even nitrous oxide gas. A medical training was essential to the safe administration of any general anaesthetic. Mr. PREEDIE pointed out certain errors that some of the speakers seemed to him to have made in their interpretation of the bill, for the wording of which he was responsible, and the meeting was adjourned to February 5th.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—At a meeting on January 15th, Dr. WALKER DOWNIE, President, in the chair, Dr. W. B. INGLIS POLLOCK read a paper on *Nystagmus, and theories regarding its causation*. Opening with a brief account of the searching nystagmus of Sym, the pseudo-nystagmus of Duane, and true nystagmus, the latter was divided, according to its causation, into congenital, occupational, organic, nervous disease type, labyrinthine, and toxic, including the general anaesthetics, ether and nitrous oxide, ether and nitrous oxide and oxygen. A short description was then given of the various theories of the mechanism of nystagmus. Duchenne ascribed it to a retardation of the nervous impulses to one member of a system of antagonized muscles, while Widmark associated it with a want of harmony between the centre for the co-ordination of the ocular muscles and the volitional impulse. Gowers had recently brought forward a theory based upon Sherrington's researches into the spinal centres and the alternate contraction of opposing muscles. He believed that the centre for the control of the ocular muscles might be disturbed by influences from many sides, allowing a reciprocal muscle-reflex alternation between antagonistic ocular muscles to be set up. The paper was illustrated by a case of congenital pseudo-nystagmus, a case of congenital nystagmus due to high refractive error, and a case of miner's nystagmus with the vertical variety in one eye and rotational in the other. Dr. JAMES F. GEMMILL gave a lantern and microscopic demonstration of the auriculo-ventricular muscular bundle of His in the adult human and in certain fetal hearts. Dr. JOHN M. COWAN demonstrated a series of tracings of the venous pulse, illustrating the different conditions which may result from interference with the auriculo-ventricular bundle of His.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meeting held on January 6th, Dr. P. BOOBBYER, President, in the chair, a discussion took place on *The attitude of the municipality to the treatment of phthisis*. Dr. A. FULTON, in opening the debate, argued in favour of municipal sanatoriums, which, apart from curative and philanthropic influences, had a great educational value. Nottingham was so rich in medical charities that there was no need for extension of municipal treatment in the direction of further out-patient departments or dispensaries. He did not think the establishment of additional sanatoriums would injure the medical profession financially, for the richer class of patients would not be likely to avail themselves of such institutions, while the profession generally would be glad to be excused a long and profitless attendance on the poorer ones. The admission, treatment, discharge, and after-care of patients should be in the hands of some expert devoted to this purpose. It might even seem right to subsidize patients for some time after their discharge rather than let the benefit received be undone again by insufficient food before their proper earning powers came back again. The PRESIDENT traced the statistical mortality from tuberculous diseases and phthisis in the past and at the present time, showing that the general death-rate both of tuberculosis and phthisis had now been halved as the result of general sanitary improvements in the course of the last half-century. Of men and women engaged in the same class of work in the lace trade, the phthisis-mortality was very much heavier amongst the men, probably as a result of their more intemperate habits. He pointed out also what could be done by local sanitary authorities in the matter of preventive action, especially when aided by notification and personal teaching from expert health visitors. Dr. F. H. JACOB insisted on early examination of sputa before physical signs became obvious if cure was to be brought about. He thought it better for the serious cases to be isolated in municipal sanatoriums, and urged the need of house disinfection with every change of tenancy. Dr. C. H. CATTLE thought the results of the experiment of opening forty beds to phthisis patients at the Nottingham Isolation Hospitals

had been more successful than might have been anticipated. Besides great benefit to early cases such an institution sheltered many cases of which the home nursing sooner or later broke down owing to the heavy demands upon the strength, the rest, the food and the purses of relatives in their own houses. At the same time the present provision for forty beds was quite inadequate and might easily be filled even if increased to ten times that number. Dr. W. TIBBLES did not favour further extension of municipal sanatoriums, for the ultimate results of such treatment were not as good as was at first supposed. He thought the urinary, intestinal and other infective forms of tuberculosis should be guarded against quite as much as phthisis. Dr. W. HUNTER was on the whole satisfied with the preventive methods at present available in the homes of patients, and considered the expense of any further considerable extension of the sanatorium system at the expense of the ratepayers would be great enough to make it absolutely prohibitive. Dr. A. J. SHARP drew a graphic picture of the appalling mortality still due to tuberculosis in towns, about 450 deaths from it occurring annually in Nottingham alone, those dying being mainly persons in the middle and most useful age-periods of life. Notification came first and foremost of all preventive measures, and till that had been adopted no sanitary authority had at all realized its responsibility with regard to this disease. Dr. O. K. WRIGHT instanced the great educational value of sanatorium treatment even on the limited scale adopted by the Nottingham Corporation; despite the most inclement weather, he had found patients became readily acclimatized to fresh air in the course of a very few days. Miss I. E. FOX (Mansfield) had noticed that the introduction of compulsory notification of phthisis in Sheffield had been accompanied by very little friction. Actual instances of phthisical subjects infecting their co-workers in offices had come under her notice at Sherwood Forest Sanatorium. Dr. J. WATSON again urged the importance of early examination of sputum, and thought that any municipal scheme should give facilities for examination of sputum from people who had not placed themselves under medical care. Dr. FULTON, replying, attributed the stationary mortality from tuberculosis in Ireland partly to inherent poverty and partly to withdrawal of many of the fittest subjects by emigration. Phthisis in Nottingham at the present time was a burden the expense of which was not borne by the public, but by wives and relatives, who toiled to keep their homes together until they themselves broke down usually with the same complaint. The PRESIDENT detailed the methods of house disinfection now utilized in Nottingham. He was grateful for any recognition of curative value in the branch of sanatorium work under his direction, but, apart from the isolation of a few advanced cases, the main purpose of municipal sanatoriums was educative. Thus, in New York the average stay of each patient was only five weeks, or just long enough to get him well drilled in all matters of personal hygiene. As to the economic loss of lives, this was, to say the least, most serious. Indeed, it would be far cheaper to build sanatoriums and isolate as many patients as possible, for in that case the ratepayers would not be burthened with the maintenance of their bereaved and penniless dependents, as they were at present. After the conclusion of the discussion, a vote taken of those members present showed a strong and practically unanimous feeling in favour of voluntary or compulsory notification of phthisis being adopted.—At a meeting on January 20th, Dr. P. BOOBBYER, President, in the chair, Mr. R. G. HOGARTH and Dr. R. HEELIS showed a man, aged 29, suffering from gigantic *Enlargement of the skull* and extremities, and from spinal kyphosis and other bony deformities. Up to the age of 12, when he broke one thigh, nothing abnormal was noticed, but about that time the upper jaw began to swell, and since then he had broken one humerus. His mental condition was normal, and although he sometimes had pain at the back of the eyes he seldom had headache. In spite of some features suggestive of leontiasis ossea, the case as a whole seemed to accord better with acromegaly. Mr. HOGARTH showed a man, aged 40, employed as a caretaker, suffering from aneurysm of the innominate artery. Operation for distal ligature of the subclavian and common carotid arteries had been declined two years ago, but the disease appeared practically unchanged since then. Mr. Hogarth also showed agirl, aged 10, who had suffered from multiple tuberculous lymphadenitis to a degree which made the condition inoperable. A few caseous glands were removed from the neck and systematic treatment with tuberculin in doses of $\frac{1}{1000}$ milligram carried out over a period of nine months. The result had been highly encouraging. Mr. R. G. HOGARTH read a short paper on certain *Derangements of the knee-joint* the result of traumatism. In the case of a young man under his care a movable lump within the joint proved on removal to consist of both articular cartilage and bone. Another case illustrated very well the "quiet necrosis" or osteo-chondritis desiccans which followed some injuries of this kind. A third case was in a young girl who, after recovering perfectly from an attack of acute synovitis lasting a month, relapsed. Eventually, after several attacks of slight synovitis, an operation resulted in the removal of a fibrous pedunculated body which took origin from the synovial membrane. Mr. Hogarth further traced the anatomical features of the joint concerned in the production of these injuries, and indicated occasional difficulties in locating and removing a loose body so produced, as well as the important relation the popliteus tendon bore in operations for their removal. Treatment by means of a steel bar hinged splint, which effectually prevented torsion, was recommended. Drs. R. WOOD (Ilkeston) and J. S. BOLTON discussed the paper. Dr. J. WATSON showed the placenta (single), fetal bags of membranes (distinct), and twins, of which one was living at birth and one previously dead, from a case of extreme hydramnios in a young married woman.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—At a meeting on January 20th, Dr. SOLLY (Harrogate), President, in the chair, Dr. BUCKLEY (Buxton), in a paper on *Intestinal lavage* on the Plombières system, said that where evidences of intestinal putrefaction could be found from examination of urine, stools, etc., better results were obtainable by douching than by the use of chemical antiseptics, and in those cases where appendicostomy might seem to be indicated for lavage of the colon, this method should first be tried. Mr. WILLIAM ARMSTRONG (Buxton) said he had used intestinal lavage for the last eight years in a large number of cases. He reported in his paper in the "Arthritis" number of the *Practitioner* some six years ago a very remarkable case of rheumatoid arthritis cured by intestinal lavage alone. Certain cases of arthritis, many cases of urticaria, recurrent erysipelatous eczema, ordinary eczema, and neurasthenia had been greatly helped by this method. The important point had always seemed to him to be the exact indications for this treatment; and his experience had shown that the most reliable guide was the increase of the aromatic sulphates. Dr. ACKERLEY (Llandrindod Wells) asked if it was to be understood that the only treatment in the cases mentioned was intestinal lavage. On receiving an affirmative answer, he expressed his doubts as to the value of local treatment of the colon in securing *permanent* results in such cases. In all cases where there was a catarrhal or septic condition of the colon, treatment ought to be directed in the first place to guarding against oral sepsis and securing perfect mastication and insalivation of all kinds of food hard or soft. Removal of mucus by lavage had only temporary results. The secretion of mucus was protective, and the aim should be to prevent injurious substances entering or being formed in the bowel. In its proper place, as accessory to other treatment, he fully recognized the value of intestinal lavage. Dr. MOUILLOT (Harrogate) considered the method of intestinal lavage a most valuable addition to ordinary eliminative spa treatment. It was so even in Harrogate, where the waters usually act as laxatives. Dr. MANTLE (Harrogate) thought the theory of intestinal autointoxication might be carried too far; he was inclined to think with Hertz that it was necessary to have a breach of mucous membrane—an abrasion or ulcer—to get absorption of toxins from the bowel. He had found washing out the colon give good results in some cases of rheumatoid arthritis and chronic skin diseases, but only when associated with colitis, and unless mucus was seen he would not advise it in such cases. Mr. C. R. B. KEETLEY said that appendicostomy or some such operation was a supplement to the Plombières treatment which might occasionally be found of utility.

Reviews.

AN OBSTETRIC DIARY.

A DIARY of the first three deliveries of Queen Charlotte, the wife of George III, has been edited by Dr. NIGEL STARK, and published under the title, *An Obstetric Diary of William Hunter*.[1] One thing that strikes us is the difference between the physician of 1762 and his successor of to-day. William Hunter, as most medical men know, was a man of much wider knowledge and greater refinement of intellect than his illustrious brother John, who, concentrating all his mind on anatomy and surgery, remodelled the methods of surgery for all time. William Hunter was a scholar, an anatomist, a numismatist, and a courtly gentleman. He was called in by Mr. Hawkins to advise as to Queen Charlotte, but he does not seem to have done much more than to listen to Mr. Hawkins and feel Her Majesty's pulse. Mr. Hawkins, like many of his contemporaries, seems to have thought that the sovereign remedy was bleeding, and Dr. William Hunter's chief service to Queen Charlotte during her pregnancy was to protect her from unnecessary depletion. He was not present at the delivery. This was supervised by the midwife, Mrs. Draper, not a person of very good judgement, for a little after 6 she told Dr. Hunter that "it would be slow," and at half after 7, "when I little expected it from what Mrs. Draper had told us, the Prince was born." Hunter waited in an anteroom. He examined the placenta and the "cloaths." He visited the Queen during the lying-in, felt the royal pulse, and prescribed some harmless carminatives. Almost the only thing that Hunter did that he could do better than Mrs. Draper was the examination of the placenta. It is curious to speculate what he would have done if his examination had led him to conclude that a piece of placenta or of chorion was retained *in utero*. Would the royal personages who did not allow him to supervise the birth of the infant have permitted him to explore the royal uterus and bring away retained placenta or chorion? We very much doubt it, and doubt if Hunter would have proposed it. His examination of the placenta doubtless interested him as an anatomist, but from a clinical point of view it was about as useful as the carminative draughts he prescribed. If a bit of retained placenta had led to haemorrhage or septic poisoning, and thus to loss of life, it would at that time have been said to have been a "visitation of Providence." What will be the duties of an accoucheur a hundred years hence? Anaesthesia will be expected by every mother as a matter of course; probably spinal anaesthesia. Will the ordinary general practitioner take his patient's opsonic index, and inject a few millions of dead bacteria, or will he call in a specialist, appointed by the local authority, to do this kind of thing for him? Whatever he does, we may be sure that by that time, if anything goes wrong, he will not be able to put the blame upon Divine Providence. We are told that "William Hunter had a talent for relating anecdotes with such facial and vocal expression that if he had adopted the stage as a profession he would have risen to high rank as a comedian." Considering the very limited obstetrical services that Hunter was allowed to render to his illustrious patient, it seems likely that his talent for amusing people had more to do with his success in practice than his professional skill.

GYNAECOLOGY

THE second volume of Professors KELLY and NOBLE'S *Gynaecology and Abdominal Surgery*[2] includes chapters on complications following operations, on the surgery of pregnancy, uterine and ectopic, and on the operative surgery of the breast, liver, gall bladder and bile ducts, stomach, intestines, vermiform appendix, pancreas, spleen, kidney, and ureter; also other chapters on tuberculosis of the peritoneum, penetrating wounds of the abdomen, hernia, and the use of drainage in abdominal and pelvic surgery. This volume is of a high degree of excellence both as to text and illustrations, maintaining the well-approved character of the articles in the first volume, which was reviewed in the JOURNAL for March 14th, 1908. As we read so much about operations, we may feel inclined to turn, for a change, to the chapter on tuberculosis of the peritoneum, by Dr. George Ben Johnston of Richmond, Virginia. Had that article been written twenty years ago we should have found, we suspect, enthusiastic eulogies of operative measures; but Professor Johnston, like many other contemporary workers, is not enthusiastic about surgical treatment. He observes that Billings, A. E. Halstead, and Shattuck consider that in the ulcerative and fibrous forms of tuberculosis of the peritoneum the surgeon merely writes the death certificate, and adds that Ochsner states that a review of the literature of the subject has convinced him that surgeons who insist on thoroughness in operations for tuberculous peritonitis have had most unsatisfactory results. Dr. Johnston gives details of different methods of opening, and drying, or flushing with fluids the tuberculous peritoneal cavity, with little or no comment, and in conclusion states that

> in general it may be said that in an affection of this kind one's first efforts should be directed towards treating the patient, while the second consideration has to do with the most approved method of handling the local process. Whether this is to be done surgically, symptomatically, or specifically will depend, for the present, very largely on the attitude of the physician in charge.

In short, experience is against the free use of the knife in very random operative procedures, still too often undertaken for the relief of a grave and obstinate disease the treatment of which is, nevertheless, most unsatisfactory. We can turn—not with pleasure but at least with satisfaction—to other affections where the contemporary surgeon may justly claim triumphs in improved operative methods. Diseases of the female breast are included in this volume, the chapter being written by Dr. Bloodgood of Baltimore. The coloured drawings of diseases of the breast as seen when the parts are laid open by the scalpel after operation are triumphs of scientific art, brilliant even in a publication issued from the Johns Hopkins University. On the other hand, we question whether the portrait of two dozen pressure forceps (Fig. 530) is likely to be instructive to the beginner who attempts a modern radical operation for removal of a cancerous mammary gland. The instruments cover three-quarters of the field of operation and the divided sternal end of the pectoralis major—one of the points which the illustration professes to show—does not come out clearly. The drawings showing the dissection and removal of the lesser pectoral muscle are much more instructive, whilst further on we find that the process of dissection along the axillary vein is represented by another big crop of forceps. The text in this chapter is very good. The mortality in operable cases in which the complete operation for the removal of the cancerous breast has been performed in the Johns Hopkins Hospital is 2 per cent. Dr. Whitridge Williams contributes the chapter on extrauterine pregnancy. He does not advocate operation where there is a quiescent haematocele, interference being only necessary when suppuration occurs, or when the haemorrhage continues. He considers that when the fetal sac is opened late in pregnancy the placenta should not be removed, except when its partial separation has already given rise to profuse haemorrhage; under such circumstances its removal becomes imperative, no matter how dangerous it may appear. Like all other living authorities, Dr. Williams admits that the removal of the fetus late in extrauterine pregnancy is probably still the most dangerous operation which gynaecologists are called upon to perform. He adds that doubtless improved technique will gradually result in diminution of its dangers. Dr. Williams notes that the first vaginal operation for extrauterine pregnancy in the States was performed in 1816 by Dr. John King, of Edisto Island, near Charleston, South Carolina. A full-term child was removed after cutting through the posterior vaginal wall.

[1] *An Obstetric Diary of William Hunter* (1762–1765). Edited with notes by J. Nigel Stark, M.D., F.F.P.S.G., Surgeon, Royal Samaritan Hospital for Women; late President, Glasgow Obstetrical and Gynaecological Society, etc. Reprinted from the *Glasgow Medical Journal*. Glasgow: A. Macdougall. 1908. (Demy 8vo, pp. 55. 1s.)

[2] *Gynaecology and Abdominal Surgery*. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon.) Edin., Professor of Gynaecologic Surgery at the Johns Hopkins University, Gynaecologist to the Johns Hopkins Hospital, Baltimore, and Charles P. Noble, S.D., Clinical Professor of Gynaecology at the Women's Medical College, Philadelphia, Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia. Illustrated by Hermann Becker, Max Brödel, and others. Volume ii. Philadelphia and London: W. B. Saunders Company. 1908. (Sup. roy. 8vo, pp. 900, 871 illustrations. 35s.)

It is interesting to recall that another gynaecologist, Gaillard Thomas, was born in Edisto Island, that Marion Sims was a native of Lancaster, S.C., and that Bozemann was born in Georgia, close on the borders of that State, which has been so fertile in cotton and gynaecologists. The chapter on operations of the stomach has for its author a British surgeon, Mr. Moynihan, and no better writer could have been chosen. His views and his methods are well known in this country; in this work he has the advantage of several good illustrations by Max Brödel and Becker demonstrating the different stages of gastrectomy, gastropexy, gastrostomy, and pyloroplasty. Howard Kelly contributes an excellent chapter on the surgery of the ureter, and Noble and Brooke M. Anspach make good use of nearly a hundred pages devoted to the surgery of the kidney. Kelly's article on splenic surgery will be read with interest; and in a chapter on surgery of the pancreas, by Dr. Opie of New York, the illustrations demonstrating operative measures are of the highest quality in every respect, whilst the text has been carefully prepared. A monograph of 130 pages by Dr. John B. Murphy treats of intestinal surgery, including the operative treatment of rectal cancer, fistula, and haemorrhoids, but excluding operations for diseases of the vermiform appendix, a subject taken in hand by Drs. Kelly and Elizabeth Hurdon. The chapter on operations on the gall bladder, bile ducts, and liver by Dr. Ochsner contains some fine illustrations by Becker and others. The chapter on operations for inguinal hernia by Martin of Philadelphia also has an excellent series of illustrations. We must not omit mention of a somewhat original article on the technique of drainage, and of the chapter by Dr. Brown Miller of Washington on complications following operations. In writing on penetrating wounds of the abdomen Dr. Floyd McRae gives some good statistics, and, like previous writers, shows that in modern military surgery nearly all the cases which recovered were those in which no operation was performed. Guy Hunner writes on femoral, umbilical, and rarer forms of hernia, whilst Ross, Norris and Barton Cooke Hirst contribute chapters on Caesarean section, operations during pregnancy, and the operative treatment of sepsis in the child-bearing period.

Nine years ago we reviewed a fasciculus of the useful and instructive reports from the gynaecological clinic in Helsingfors. The present number,[3] like that which was previously submitted, contains an article by Professor ENGSTRÖM himself; its subject is the premature detachment of the normally situated placenta, and is mainly a report and review of one case. Two other contributions make up this instalment of the reports. The first, by Dr. Renvall, is the complete monograph on appendicitis during pregnancy and labour, reviewed in the JOURNAL on January 2nd, p. 24. The second is a brief but interesting note on supernumerary mammae secreting milk, by Dr. Björkqvist. The value of these *Mitteilungen* is high, so that they ought to be found in every British public medical library at least, else much good matter will be lost to us.

We noticed the third edition of *The Principles and Practice of Gynaecology for Students and Practitioners*[4] in our issue of April 1st, 1905, and the fact that it has now reached its fifth is evidence that it is a book that a good many people want. If the title were altered by the insertion of the word "surgical" before "gynaecology," and the striking out of the words "for students and practitioners," we should have nothing but unqualified praise to give it. The writer is a surgeon of experience and resource; his descriptions are detailed and methodical, and illustrated by admirable drawings. Like every intelligent medical man of the present day, Dr. DUDLEY is firm in his faith in the principles laid down by Lord Lister. In his practice he is, if we may be allowed to coin a word, even hyper-Listerian. Special clothing for the surgeon during an operation—a gauze turban, mask, india-rubber gloves—and the repeated washings of the patient's skin with different chemicals, are here described as essentials. Lord Lister not long ago expressed in our columns his confidence in a simple application of 1 in 20 carbolic acid, and his belief that repeated scrubbings with various chemicals were injurious rather than beneficial. Still it is proper that a textbook should be up to date; and it is better to take too much care about antiseptics than to neglect them. As a textbook of *surgical* gynaecology, we know none better in the English language. But the medical part of the book is as poor as the surgical is good. The author copies the imaginary pathology and the bad local meddlesome treatment of thirty years ago. We will not linger on these unfortunate defects, but only advise the reader to study Dr. Dudley's descriptions of operative details, and go to other works to learn about dysmenorrhoea, endometritis, sterility, and the minor diseases of women generally.

In one of his entertainments we remember hearing the late Mr. Corney Grain say that there was nothing so mean and cowardly as to say of a man that "he means well," and yet that is exactly what we are obliged to say as to the authors of *Practical Gynaecology*.[5] They mean well, but they have not attained perfect realization of their intentions. This book sets forth more than a nurse need know, but not enough for a student of medicine. Like some other inexact writers, the authors do not distinguish between sterilization and disinfection. Sterilization of the hands, the patient's skin, the air, and everything in contact with the patient, is impossible. What can be and ought to be attained is to reduce the unavoidable dose of microbes to such a small one that the patient's phagocytes can deal with it. The operation of vaginal hysterectomy is described in a general sort of way; but we should be sorry for the patient on whom any one should attempt the operation with no more information than he finds here. Abdominal section is not described at all; but the after-treatment is. The mode of sterilizing dressings by superheated steam is described; but this is hardly the business either of nurse or student. The writers' favourite antiseptic appears to be a proprietary article the exact composition of which is not known. At p. 163 the nurse or student is told that sometimes the uterus is fixed by adhesions; and that in such cases a course of "*plugging and douching*" for two or three weeks may lead to absorption of the adhesions. It is not the business of a nurse to express an opinion on treatment of this kind; and for her this piece of information is not required. Looked at from the student's point of view we should have liked to have seen him told that daily plugging the vagina in a case of pelvic peritonitis would cause the patient much discomfort, and that the benefit of it is very doubtful. There is no doubt that peritoneal adhesions are absorbed without either plugging or douching; and most physicians would teach that in pelvic peritonitis the quieter the patient is kept, and the less the parts are meddled with, the better. We hope that Mr. Young's next venture into publication may be work of a more ambitious kind, and that he will think and observe for himself, and not merely reproduce what he has seen done and heard said by other people.

SYPHILIS.

THE *System of Syphilis*,[6] now in course of publication, promises to be, when the six volumes are all published, an encyclopaedic work of reference. The subjects dealt with in the first volume may be mentioned seriatim. The history of syphilis has been well done by Dr. Iwan Bloch of Berlin, whose *Ursprung der Syphilis* has been reviewed in these columns (vol. i, 1902, p. 1033). Once more the author insists on the Columbian origin of syphilis, and

[3] *Mitteilungen aus der gynaekologischen Klinik des Professor Dr. Otto Engström in Helsingfors.* Vol. VII, Part III. Berlin: S. Karger. 1908. (Sup. roy. 8vo, p. 169 to p. 306 of Vol. VII. M. 4.60.)

[4] *The Principles and Practice of Gynaecology for Students and Practitioners.* By E. C. Dudley, A.M., M.D., ex-President of the American Gynaecological Society; Fellow of the Royal Society of Medicine, England. Fifth edition. London: Henry Kimpton. 1908. (Roy. 8vo, pp. 806; 431 illustrations and 20 full-page plates. 25s.)

[5] *Practical Gynaecology; a Manual for Nurses and Students.* By Netta Stewart, Sister in the Gynaecological Wards of the Royal Infirmary, Edinburgh, and James Young, M.B., F.R.C.S.E., Clinical Tutor in Surgery, and late Resident Gynaecologist, Royal Infirmary, etc. Edinburgh and London: Oliver and Boyd. 1909. (Cr. 8vo, pp. 343. Numerous illustrations and plates. 5s.)

[6] Oxford Medical Publications. *A System of Syphilis.* Edited by D'Arcy Power, M.B.Oxon., F.R.C.S., and J. Keogh Murphy, M.D., M.C.Camb., F.R.C.S., with an introduction by Sir Jonathan Hutchinson, F.R.S. Vol. i. 1908. London: Henry Frowde, and Hodder and Stoughton. (Roy. 8vo, pp. 416, 63 plates, some of which are coloured. £2 2s.)

with so much evidence that it is difficult not to accept the matter as settled, thus coming back to the ideas of earlier writers, such as Astruc, whose views had been to some extent shaken by those who traced the existence of syphilis in Europe back to Roman times, for instance. Dr. Bloch insists on the great harm done to the advance of knowledge of syphilis by John Hunter's unfortunate experiment on himself, and his dogmatic attitude on such points as visceral and brain syphilis. It is dangerous to rely on authority, however great; indeed, the greater the more dangerous. This is exemplified by Ricord's idea that the secondary symptoms of syphilis were not infectious. Dr. Bloch is in error when he gives Ricord the credit of having been the first to draw the distinction between the soft sore and the true syphilitic chancre; the duality of chancres was demonstrated by Bassereau. The microbiology of syphilis has been thoroughly dealt with by Dr. Metchnikoff, and the difficult subject of the general pathology has been well presented and brought up to date by Dr. F. W. Andrewes, who is to be congratulated on the fact that he has given illustrations of plasma cells stained by the Pappenheim method, for the plasma cell has been somewhat neglected in this country, apart from British dermatology, of course. Students who come from their pathology lectures and work appear as a rule to know next to nothing about the plasma cell. Colonel Lambkin gives a good review of the primary and early symptoms in the male, whilst Mr. Shillitoe does the same for the female. As to the illustrations of the former article, those delineating the primary sore might have been on a larger scale with advantage—Plate XXXVI, for instance. Dr. G. F. Still contributes an exhaustive review of congenital syphilis. The use of the word "pemphigus" in connexion with the early and rare syphilitic rash of infants is to be deprecated; "bullous syphilide" is much better. As to the treatment of congenital syphilis, the author speaks of $\frac{1}{2}$ gr. and $\frac{3}{4}$ gr. doses of grey powder, but there need be no hesitation in prescribing 1 gr. thrice a day, for syphilitic infants stand mercury well. It should have been insisted a little more that congenital syphilis is infectious, and that every care should be exercised by those in attendance on such infants in order to avoid infection, for it is not so rare a source of spread to the healthy as is supposed. Altogether a good series of articles on some of the special aspects of syphilis.

Dr. MAISONNEUVE'S original Paris thesis[7] on the prevention of syphilis by means of calomel ointment has been dealt with already in these columns. An English translation has now appeared, and will certainly prove of interest to those not familiar with French, especially as the translation is on the whole well done. But with regard to the description of the solution of continuity necessary for the penetration of the micro-organism as "the port of entry" (for *porte d'entrée*), it smacks of the ocean and customs returns, and may be due to the fact that the translator is a naval surgeon. Why not "the open door"? The experimental inoculation of syphilitic virus which Dr. Maisonneuve allowed to be carried out on himself—with happy results, fortunately, as far as the prophylactic effects of the calomel ointment were concerned—need not detain us, for it is now a well-known episode in the recent history of syphilis. But a more important point is the ascertained fact that the remedy has been proved to be a failure in several instances (Gaucher, Neisser, etc.). Notwithstanding this, however, the use of the ointment should not be given up, for, applied very early, it may possibly be of prophylactic use. The difficulty of the proof of a negative does not require to be insisted on here.

PRINCIPLES OF SEWAGE TREATMENT.

The Principles of Sewage Treatment,[8] by Dr. DUNBAR, of Hamburg, is one of the best books on the subject that has yet appeared. To the English reader it is doubly interesting in that it gives an account by an outside authority—for Dr. Dunbar's experience in dealing with problems of sewage disposal in Germany is well known—of the history and development of modern methods of sewage treatment in this country, and also in that it embodies a great deal of the results of Continental research and practice. The translation from the German has been well done, and the book is profusely illustrated and well arranged.

The first part deals with the historical development of the sewage problem, and we learn that until a few years ago pollution of the streams had received even less attention in Germany than here, but that in recent years the laws which have been passed, and the establishment in Prussia of a central authority for dealing with questions of water supply and pollution of rivers have made the position more satisfactory there. It is admitted that English experience has been the foundation of German practice; but the accounts of what has been done of late years in Germany and elsewhere make it clear that it is quite necessary for the English expert to keep himself fully conversant with foreign ideas.

Two short chapters deal with the present position of sewage treatment and the objects of purification works, and in these the causes of variation in sewages are discussed, and, as might be expected from a Hamburg writer, special attention is drawn to the facts that on the one hand epidemics may be spread by polluted rivers, and on the other that large amounts of sewage may be poured, without causing appreciable nuisance, into rivers of sufficient size.

The bulk of the volume is given to a description of the various methods of sewage treatment and a discussion of their merits. Screening and sedimentation have received much greater attention on the Continent than here, inasmuch as in many cases there the sewage undergoes no further treatment, and the chapters dealing with these matters deserve very careful study.

The discussion of the merits and demerits of septic tanks is worthy of notice, and may be said to represent very closely the view of the majority of English observers. Under the head of methods for the removal of putrescibility, Dr. Dunbar describes surface irrigation on land, land filtration, artificial biological methods, and Degener's method of treatment with powdered lignite, which has been brought into use in several German towns. The "absorption theory" of the action which takes place when sewage is applied to land or artificial beds is very fully set out, and is to a certain extent very convincing. In discussing contact beds the necessity for washing the medium is insisted on. The various methods of distributing sewage upon percolating filters are given in considerable detail, and what is called the Hamburg filter, in which the distribution is effected by spreading the sewage over a top layer of very fine material, is described in full.

The treatise concludes with chapters on the disinfection of sewage, on the supervision and inspection of sewage works, and on the utility and cost of the various methods of sewage treatment. In speaking of the tests to be applied to a sewage effluent, Dr. Dunbar states that one great object to be effected in sewage purification is the removal of the organic sulphur, the presence of which indicates the putrescibility of the liquid, and calls the estimation of its amount the "Hamburg putrescibility test." His standard for a good effluent is that it should be non-putrescible, and should produce no perceptible changes in the stream into which it is discharged.

The utility and cost of the various methods are not compared in any detail, and what is said would be of little service to anyone setting out to formulate a scheme of sewage disposal. It is, indeed, in this direction that some may find the book disappointing. It would have been impossible for the author, within the limits he has set himself, to give sufficient detail to serve for the preparation of a sewage disposal scheme; but he has, however, been very successful in delineating the principles underlying all methods of sewage disposal, and this volume, with its copious illustrations and bibliography, is worthy of the attention of the most advanced student of the subject.

Much good work in the investigation of methods of sewage purification has been done by the Hamburg State Hygienic Institute under Dr. Dunbar, and it would have been useful for the English reader if this work could have been described in detail, but that perhaps would have

[7] *The Experimental Prophylaxis of Syphilis.* By Dr. Paul Maisonneuve. Translated by Fernand L. de Verteuil, M.B.Edin., M.R.C.S., L.R.C.P., Surgeon R.N. 1908. Bristol: John Wright and Co. (Cr. 8vo, pp. 110. 4s.)

[8] *The Principles of Sewage Treatment.* By Professor Dr. Dunbar, Director of the Hamburg State Hygienic Institute. Translated by Dr. H. T. Calvert. London: C. Griffin and Co., Limited. (Med. octavo, pp. 294. 15s.)

extended the present volume too greatly, and the reader must content himself with the list of references given in the bibliography.

A MEDICAL NOVEL AND SOME MISCELLANIES.

THE average representative of the surgeon's craft in modern novels is not a very attractive figure—a cold-blooded abstraction, and often a butcher; but in *The Bias*,[9] by Miss MARGUERITE CURTIS, he is of quite another character—an idealist who cherishes his illusions, and believes in free will and credits human nature with an inclination towards good. The other professional character in the book—a psychologist—takes precisely the opposite view. Given free choice and a balance of material benefits on the side of evil, no woman, and but seldom a man, would prefer good to evil. Anxious to convince his surgical friend of his error, he persuades him to try an actual experiment by submitting a young ward of the latter alternately to good and evil influences. For six months of the year she is allowed to move freely in the fastest of the smart sets of the metropolis; the remainder she spends in good works in a quiet country village. The result of the experiment we will leave readers to learn for themselves, only premising that the *dénouement* is dramatic, and the interests of the novel well sustained to the end; whether the tests were applied in such fashion as to ensure a decisive result, supposing one to be possible, is not quite certain. In the way of professional criticism no remark need be made, except that it is unusual for a successful Harley Street surgeon to keep, so to speak, surgery hours, remaining at home between six and seven in the evening, on the off-chance of patients arriving. For the rest, the book is quite worth the attention of those to whom problem novels in any wise appeal.

The Grammar of Life[10] is the work of one who, "perplexed and troubled" by the intellectual chaos and unrest of the day, set himself to solve the problems involved by reading "books of a varied nature, comprising philosophies, religions, sciences, histories, general literature, and fiction"; he also did a little travelling, and "mingled with both saints and sinners." The result is that he finds "no phenomenon of life, however complex and astonishing, incapable of solution." A second product is this volume, in which, thanks to the capacity of the author for expressing, if not explaining, himself in succinct language, most of the more abstract questions involved by the existence of this world and its inhabitants are dealt with in 237 pages of large print. For the rest, the author's methods are those of other metaphysical philosophers, and his answers will doubtless please those who regard a question as satisfactorily answered when its factors have been restated in other than everyday terms. Who, for instance, could be so unreasonable as to wish for any other explanation of life than that it is a form of motion? or who so unphilosophic as to gird at his existence when he learns that, whereas the universe at large has no why, no wherefore, and no purpose, man, at any rate, has a definite object? This is to go on developing his compatibility with his environment until the optimum is reached. This effected, he will retrograde until apparently he is once more a struggle-for-lifer decked in wodes and skins, unless meanwhile—something else happens. Whether he has a soul is not stated; probably he has not, as his chief characteristics as a living being are the possession of three instincts. Therein he is on a level with the dog, but better off than the cat. The latter is a proud, independent animal, lacking the gregarious instinct which, with those of reproductiveness and self-defence, are the attributes of dogs and men. The gregarious instinct is that which endows its possessor with a conscience and induces him to sacrifice himself for the good of the community. What a conscience is we could not discover. Possibly some other reader may be more fortunate.

To the volume entitled *Reminiscences: Personal, Professional and Philanthropic of John Blackwood, M.D.*,[11] attaches something of the interest of a conundrum, for though the author writes under an assumed name, it is indicated that there are many who will guess his identity. He was born near Edinburgh in 1832, became M.D.Edinburgh about 1853, taking honours for a thesis entitled *De Dyspepsia*, then obtained honours at the M.B.London examination, practised near that city for some forty odd years, and finally retired to Edinburgh, where he is still living. The avowed object of the book is the solution of the vexed problems of human unfitness and the disclosure of the lines on which health, happiness, and success may first be attained and then preserved; and included in it are a certain number of sketches of personalities famous in Scotland during the first half of last century, and some comparison of Scottish and English systems of medical education and examination. Speaking of the Fifties, during which his studies were completed, the author says that the dissecting and clinical courses in London took a wider range than Edinburgh, and were more thorough; but with regard to lectures and the application of study to practice, the Edinburgh professors excelled their fellows in London. As for examinations, they were less thorough in the Scottish than in the English metropolis. Such instruction as the book contains is conveyed in the form of minute descriptions of conversations held by the writer with various persons, and of equally detailed accounts of his thoughts, feelings, and motives on sundry occasions. The volume, it is stated, is based on a diary carefully kept throughout the writer's life, and this would probably have been guessed by any one familiar with the precision of language and wealth of apparently superfluous detail characteristic of the diaries of early Victorian days. Though some readers may get a little weary, there are many who will find it—in the language of our forefathers—vastly entertaining.

Few folk and no profeshonal riter, as the book itself might say, could rede *The Arcana of Nature*[12] without feeling envious; it is a history of certain peeple who falsified the saying that there is no royal rode to lerning. Swedenborg it is true was a well-educated man as times then went, but the knowledge which made him famous was due to no effort of his own, and the others were entirely unlettered individuals when first they gave pruf of attainments. For instance, the remarkable exposition of the history and laws of creation from which the present volume derives its title and of which it supplies a reprint, was penned by Hudson Tuttle when a mere youth and scholastically an ignoramus. We say penned, because he, like Andrew Jackson Davis and Swedenborg, receeved his knowledge in reddy made lots and had nothing to do but rite it down. The kind purveyors were spirits with whose world each of these riters was equally familiar. Nevertheless each differs from the other in his account of its constitution: which is curious. They were alike, too, in the worldly wisdom with which they applied their spook-inspired knowledge, thus attaining financial positions frequently unreached by mere burners of midnight oil. Finally there was similarity in the circumstances in which their knowledge commonly came. It was usually in the dreamy quiet of their own apartments at the end of a day's work, and Swedenborg for instance received his first communication from the spirits at the end of a generous dinner. As it seemed possible that the same easy rode to acheevements without labor lay open to all, we have tried it. The result is this review, for the contents and style of which we consequently neither seek praise nor accept blame. Nor yet for its orthography, which is somewhat on the lines of the book itself, or, in other words, on those of the Simplified Spelling Board. In conclusion, though still dubious as to the true genesis of Mr. Tuttle's work, we congratulate Dr. EMMET DENSMORE on the restraint of his general statements about his heroes and their doings.

Among the annuals which have reached us is the ninth yearly issue of the *Daily Mail Year Book*.[13] It should doubtless be found useful by those who do not habitually read the daily papers, as it purports to supply information on all the questions of the day. This is effected for the most part by supplying extracts from speeches, Blue Books,

[9] *The Bias*. By Marguerite Curtis. Edinburgh and London: W. Blackwood and Sons. 1908. (Crown 8vo, pp. 321. 6s.)

[10] *The Grammar of Life*. By G. T. Wrench. London: W. Heinemann. 1908. (Post 8vo, pp. 250. 6s.)

[11] *Reminiscences: Personal, Professional, and Philanthropic of John Blackwood, M.D.* Edinburgh: A. Elliot; and London: Simpkin, Marshall, and Co. (Medium 8vo, pp. 324. Price 6s.)

[12] *The Arcana of Nature*. By Emmet Densmore, M.D. London: Swan Sonnenschein and Co. (Demy 8vo, pp. 471. Price, 6s.)

[13] *The Daily Mail Year Book*. By Percy L. Parker. London Associated Newspapers, Limited. 1909. (Crown 8vo, pp. 272. 6d.)

or other publications bearing on the special subject, and fairly well summarizing their more recent aspects. In the selection of these the editor, Mr. PERCY L. PARKER, seems as a rule to have exercised a wise discretion, but over the general "make up" the trail of the office boy is unduly obvious. Thus about one-sixth of the whole microscopic space devoted to "Some Medical Matters" is given up to a description of an *ignotum quid* called the Ethological Society; and elsewhere, under the heading "Women's Suffrage Abroad," is hidden a fifty-word account of a really notable event, the genesis of the Research Defence Society. There is a certain quaintness, too, about the section which ostensibly consists of brief biographies of "men and women of our time." On what principle this section was constructed is not clear, as it may be regarded as a hotch-potch of people with whom every schoolboy is well acquainted, and of persons whose existence is of no practical importance to anybody but themselves and their friends. On the whole, one scarcely needed the editor's assurance that these biographies have been "personally revised in nearly every instance"; but this fact lends an attractive flavour to statements such as that Mr. Hilaire Belloc, M.P., is "one of the three cleverest young men in London," the others being Max Beerbohm and G. K. Chesterton. The latter, it will perhaps interest readers of the *Illustrated London News* to learn, is "the most scintillating and epigrammatic of living journalists," as well as a poet, satirist, and controversialist. Information is also supplied as to the more recent doings of some of the personages who figure in these biographies; thus Mr. W. H. Massingham, a "strenuous, brilliant, and sensitive Liberal journalist," "visited Constantinople in 1908." The disclosure of this feat alone makes the book worth buying, for the occurrence of the political marvel of the year "the bloodless revolution" in Turkey seems at once explained. We are glad to see that medical men do not figure largely in this section. Among those whose names appear are Sir James Crichton-Browne, "one of the most famous specialists on mental and nervous disorders and public health," and Dr. C. W. Saleeby, who among other claims to admiration, "married Mrs. Meynell's daughter," and had, it seems, "a brilliant university career." He also "championed the Beard ferment treatment for cancer." and "his father founded the Mount Lebanon Schools."

SLEEPING SICKNESS.

A QUARTERLY report on the progress of segregation camps and medical treatment of sleeping sickness in Uganda,[14] by Captain GRAY, R.A.M.C., issued recently by the Sleeping Sickness Bureau, Burlington House, London, contains some facts of interest and importance. The medical officers in charge of the various camps have been trying the various drugs from time to time put forward as specifics for this disease, and have unfortunately found that all are wanting. As the conclusions are based on the results of the treatment of hundreds of patients under rigid conditions, they are far more valuable than those that can be drawn from experiment with drugs on animals in a laboratory. Dr. Van Someren reports adversely on the combined treatment by atoxyl and mercury, but gives a more favourable account of a new drug, "soamin" (sodium-amino-phenyl-arsinate, Burroughs, Wellcome and Co.). The action of this drug, he concludes, is similar in many respects to that of atoxyl without the toxic effects of the latter, and should, he recommends, replace it for routine use in the camps. Dr. Hodges, who writes an introduction to the report, sums up the question of the treatment of sleeping sickness at the present time as follows: "There is no doubt that the hopes expressed by Professor Koch and others that atoxyl would prove a general and permanent cure for cases of sleeping sickness must now be abandoned. Personally I have never allowed myself to hope for a cure in more than a limited number of favourable cases. This may, I think, still be hoped for, though the time has not yet arrived when we can say with confidence that any apparent cure will remain permanent." The report is published by the Sleeping Sickness Bureau, and the formation of this office is clearly going to be of the greatest use in disseminating information quickly and in a form which everyone can easily obtain.

[14] Quarterly Report on the Progress of Segregation Camps and Medical Treatment of Sleeping Sickness in Uganda. For the quarter December 1st, 1907, to February 29th, 1908. By Captain A. C. H. Gray, R.A.M.C., Medical Officer in Charge of the Sleeping Sickness Extended Investigations. With an introduction by Dr. A. D. P. Hodges, S.M.O., Uganda. London: Sleeping Sickness Bureau, Royal Society, Burlington House, W. (1s.)

NOTES ON BOOKS.

THE *Year Book and Diary*,[15] which has been issued by the publishers of the *Sanitary Record* for twenty-seven years, is a diary with space for three days on each page, interleaved with thin blotting paper and containing in the first fifty pages a mass of information useful to medical officers of health or sanitary inspectors. The section on sanitary legislation in 1908 is clearly written and may be referred to with confidence. There is a list of thirty-six sanitary and allied societies having their headquarters in London, and detailed particulars are given of most of them, including the regulations as to the examinations of the Royal Sanitary Institute and of the Institute of Sanitary Engineers, but no mention is made of the Sanitary Inspectors' Examination Board. Two other noticeable omissions in the list are the Society of Medical Officers of Health and the National Association for the Prevention of Consumption and other forms of Tuberculosis.

To the ninth volume of the reports of the Ophthalmological Department of the Caroline Medico-Chirurgical Institute in Stockholm,[16] the editor, Professor WIDMARK, contributes three articles. He describes a case of bilateral detachment of the retina due to inflammatory extension from an old empyema antri in which complete recovery took place; three cases of toxic amblyopia of unusual origin, two being due to excessive coffee drinking, and one probably to arsenic; and five new cases of sympathetic ophthalmia treated by sodium salicylate, with three successes. Dr. Lindahl details the results of his investigations into the bactericidal properties of the lacrymal secretion. Dr. Forsmark describes a remarkable case of bilateral symmetrical epibulbar tumour, which he considers a "leucosarcoma"; the histological picture is, however, uncertain, and the possibility of gumma is excluded only by the long duration of the swelling. Dr. Lamm figures an unusual appearance of the fundus due to a congenital anomaly, possibly a "rest" of the hyaloid artery, and also recounts a case of orbital tumour. The first article is from the pen of Dr. Hans Gertz, and gives the theoretical basis and method of use of a new apparatus for estimating refraction in inverted ophthalmoscopic images.

Miss MCISAAC'S *Hygiene for Nurses*[17] is, on the whole, a useful compilation. It takes the reader satisfactorily through the usual course of elementary hygiene, without ever verging on originality. The information given about foods and adulteration is practical but somewhat scrappy. The section on medical inspection of schools consists almost entirely of quotations from the regulations drawn up for medical inspectors in the United States, and is out of place in a work addressed to nurses.

A "little learning" is, perhaps, more dangerous in nurses than in most other members of the community, and it is just this mitigation of wholesome ignorance which is likely to be developed by Dr. G. H. HOXIE'S *Practice of Medicine for Nurses*.[18] Nurses ought not to "practise medicine." So much the author admits in his preface, where he writes: "Because it is the author's belief that the nurse should neither diagnose nor prescribe, little space has been given to differential diagnosis and the dosage of remedies." Nevertheless, the whole book is a temptation to the ambitious nurse who might be desirous of doing those things. After a dissertation on the treatment of various forms of tonsillitis, including even the incision of abscess, the various complications of this disease are enumerated, and the author adds: "Because of the seriousness of all these affections it is usually advisable to have a physician direct the treatment of every severe case of tonsillitis." In this country we would substitute the word "always" for usually. As a manual of nursing the book is inferior to any of the well-known text-books.

[15] *The Sanitary Record Year Book and Diary, 1909.* London: The Sanitary Publishing Company. (Cr. 4to, pp. 60. 2s. 6d.)

[16] *Mitteilungen a. d. Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm.* Edited by Dr. J. Widmark. Ninth vol. Jena: Gustav Fischer. 1908. (Sup. roy. 8vo, pp. 130, illustrated. M. 5.)

[17] *Hygiene for Nurses.* By Isabel McIsaac. New York and London: The Macmillan Co. 1908. (Cr. 8vo, pp. 222. 5s.)

[18] *Practice of Medicine for Nurses.* By George Howard Hoxie, A.M., M.D. With a chapter on the Technic of Nursing, by Pearl L. Laptad. Philadelphia and London: W. B. Saunders. 1908. (Post 8vo, pp. 284. 6s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

A Compress Heater.

Dr. William E. Burton (London) writes: I desire to call attention to a very simple and excellent device for the heating of compresses, fomentations, dressings, etc. The apparatus consists, as shown in the cut, of two parts, of which the lower is to contain hot water, and to be placed on a gas or spirit stove; and the upper part is a tray, pierced centrally, to permit the vapour from the boiling water to heat the compresses, etc., placed thereon. Both

upper and lower parts are made of copper, tinned inside, and each is furnished with a wooden handle which allows of their being moved without risk of burning the hands. I have had occasion to make use of this very handy little apparatus, of which I cannot speak too highly as regards (*a*) efficiency, (*b*) simplicity, (*c*) cheapness. It does away completely with the delay and risk of scalding (arising from the usual fomentation methods, in the absence of a properly trained nurse) and saves the doctor's time in explaining. I have no financial interest in this invention, which is known as "Haden's Patent."

THE STANDARDIZATION OF DISINFECTANTS.

The questions of introducing a method of standardizing disinfectants, and the influence of organic matter upon germicidal value, have been investigated by C. J. Martin and H. Chick.[1] As the results of previous investigations on the process of disinfectants,[2] the latter came to the following conclusions:

1. A complete analogy exists between a chemical reaction and the process of disinfection, one reagent being represented by the disinfectant and the second by the protoplasm of the bacterium.
2. In the case of anthrax spores, the disinfection process proceeds in obedience to the equation for a unimolecular reaction, if numbers expressing "concentration of reacting substance" are replaced by "numbers of surviving bacteria."
3. The simple law does not hold good in all cases—for example, paratyphoid bacilli—for there are variations in individual bacilli.
4. Temperature influences the process regularly, and Arrhenius's equation can be applied. In killing paratyphosus bacilli with mercuric chloride, the reaction velocity increases about three times when the temperature is raised 10° C., while when phenol is employed, the velocity is increased from seven to eight times.
5. It is deduced from the fourth conclusion that considerable advantage is gained by the use of warm solutions of disinfectants.
6. It could be shown that a definite logarithmic relation exists between the concentration of the disinfectant and the mean reaction velocity of disinfection in the case of mercuric chloride. It is not, however, the concentration of the salt but that of the metallic ions which stands in relation to the reaction velocity.
7. Some evidence was obtained that, in disinfection with mercuric chloride, a toxic compound is formed between the metal and the substance of the bacterial cell. This compound prevents all further growth, but vitality can be restored by the addition of a large excess of soluble sulphide.

In the more recent article it is pointed out that disinfection is most often required for utensils, soiled linen, closet pans, dejecta, etc., and for the washing of walls and articles of furniture, while less frequent objects of disinfection are the sterilization of surgical instruments, and hands, and the preservation of serum, vaccine, and the like against bacterial contamination. With regard to standardization, Martin and Chick hold that it must be carried out at a constant temperature, as the disinfection process has a high temperature coefficient. They arbitrarily selected a temperature of 20° C. In order not to complicate the test, it is, they state, desirable to employ a constant number of bacteria per unit volume and to conduct the experiment in such a way that the bacteria shall possess a constant degree of resistance. Since it has been shown that a logarithmic relation exists between the reaction velocity and the concentration of the disinfectant, it follows that the time factor must also be kept constant, and thirty minutes is suggested as a suitable time during which the disinfectant may be allowed to act on the bacteria. In the case of metallic salts, a sulphide must be employed to neutralize the traces of disinfectant carried over with the test sample, and in the case of mercuric chloride, a large excess of this substance in solution is required to decompose the compound formed between the metal and the substance of the bacterium.

They find that a disinfectant varies in efficiency toward vegetative organisms, and in some cases the efficiency is ten times as great as it is in the case of other bacteria. In the case of spores, the action of phenol and emulsified disinfectants is too feeble for practical use, and the metallic salts are by far the most efficient germicides. They found that the ratio between the concentration of phenol required to kill the same number per unit volume of sporing and vegetative forms in the same time varied between 17 to 1 and 25 to 1. A virulent strain is somewhat more difficult to kill than a non-virulent strain of the same microbe. Owing to the variations in the resistance of different germs toward the same disinfectant, it is necessary to use one arbitrarily selected germ for testing purposes. *B. typhosus* appears to be suitable, since it occupies a position which in many respects might be termed average, but it is not necessary to employ a virulent strain. The presence of 10 per cent. of blood serum in the testing material reduces the efficiency of 1 per cent. phenol by about one-eighth. The effect upon emulsified disinfectants is greater. The effect on mercuric chloride is much greater, a 0.5 per cent. solution being reduced to from 0.6 to 0.06 of its original value as the concentration of the serum was increased from 5 to 30 per cent.

The presence of particulate organic matter—for example, animal charcoal, dust, albumen precipitated in a state of fine division, bacteria, and faeces—was found to affect the germicidal value of emulsified tar acid disinfectants to a much greater extent than that of phenol solution. The whole of the emulsified tar acid could be removed by a suitable addition of the particulate organic matters named. The authors have drawn a curve representing the adsorption of tar acids by animal charcoal. When a 3 per cent. suspension of dried and finely particulate faeces is employed, the efficiency of phenol is only reduced by about 10 per cent., while that of the emulsified tar acids is reduced from one-third to one-eleventh of the original value. The soluble commercial cresols occupy an intermediate position, the reduction depending on the solubility. The reduction in the case of the emulsified tar acids was found to be higher the finer the emulsion. Within the limits of concentration of disinfectant employed the amount of emulsion removed by the particulate faeces was approximately proportional to the concentration of disinfectant. The removal was found to be due principally to adsorption of the emulsion upon the surface of the particles. The authors give the details of a method of standardizing disinfectants in the presence of faeces, based on the foregoing considerations.

In a further communication[3] the same authors briefly deal with the power of an emulsified disinfectant to kill germs, as compared with that of the same disinfectant after solution of the active principles. They found that the emulsified condition was important, inasmuch as the germicidal value sank considerably when the emulsion was destroyed by dissolving the tar acids in alcohol. They were able to demonstrate that the emulsified condition permitted of adsorption of the emulsion particles by bacteria, and in support of this they adduce evidence of the disappearance of emulsified particles. A curve is plotted which shows the rate of adsorption.

[1] *Journal of Hygiene*, 1908, vol. viii, No. 5.
[2] Ibid., 1908, vol. viii, No. 1.
[3] Ibid., 1908, vol. viii, No. 5.

ROYAL COMMISSION ON VIVISECTION.

FOURTH REPORT.

(Continued from page 229.)

WE continue our abstracts from the evidence of which the minutes are contained in the fourth report of the Royal Commission on Vivisection, issued in December, 1907.*

Evidence of Dr. A. D. Waller, F.R.S.

Dr. Waller gave evidence as to some of the statements made in Miss Lind-af-Hageby's book, *The Shambles of Science* (original edition). With regard to the "dog injected with a substance derived from a lunatic," he was present at the lecture, and could identify the dog. As regards "a troublesome dog," on going through the description he could only say he saw nothing of the sort. He did not think this lecture took place in the university. It could not have taken place at the date given by Miss Hageby, because the laboratory books showed the lecture on "a dog injected with a substance derived from a lunatic" took place on that date (February 26th). He agreed that it might have taken place somewhere else. He was present at the lecture on March 12th, described as "The only completely satisfactory method." Asked if he considered that Miss Hageby's book gave a fair and accurate representation of what took place, he said, Oh, no; it was a representation coloured by the sentiments of the lady—in good faith, no doubt. Dr. Waller was then asked about the lecture on December 3rd, 1902, as to which she stated on p. 11:

> He inserts one point of a pair of forceps under the skin behind the skull for a moment. . . . The animal begins to struggle, quickly moves its limbs to its back, and tries with hands and feet to thrust away the instrument.

The witness's note on this was:

> The ordinary reflex movements that do not imply any sensation.

On page 12 she said:

> The wound is cauterized.

His note was:

> Presumably the cord is destroyed.

That meant pithing. He meant that there was no cauterizing. Then on page 13 was the episode of the frozen rabbit left in an ice-box, and on the next page the description of its start with horror. What happened was that the rabbit was put in an ice-chest—a refrigerator—to lower its temperature, but the refrigerator was not cool enough, and the animal's temperature was not lowered. It was not anaesthetized. It was simply put into the refrigerator to show that its temperature did not go down as that of a cold-blooded animal would. There was no vivisection at all, and no freezing of the animal. Miss Hageby's description was:

> The animal was taken out of the freezing machine quite unconscious but frozen stiff, like a piece of wood. With all signs of terror the animal springs back, trying to get away, but half-paralysed by the cold and half-fascinated.

The witness's comment upon that was simply that all that was impossible. Asked about February 3rd, 1903, when there was said to have been

> an experimental production of blood clotting by injection of a nucleo-proteid,

Dr. Waller said he was there and gave the anaesthetic; and there was a description on page 30 of the anaesthetist looking "most careful, as if he were attending the precious life of some human patient," and so forth. It simply meant that it was one of the very first lectures delivered in the laboratory, and he laid great stress upon anaesthesia, and gave the anaesthetic himself in order to show how it was to be done by other people in the laboratory. Asked, as regards all these experiments at which he was present, if there was any case in which the animal was operated upon either without anaesthetics or without sufficient anaesthetics, he replied, Certainly not. No experiment had been performed in that laboratory in which an animal had not been completely insensitive to pain. If there were movements in the animal, they were reflex—the ordinary convulsive movements that happened. Asked about the lecture on February 19th, described as

> An experiment that is not supposed to be useful,

he said he was present. On page 59 they said:

> The lungs are exposed, and artificial respiration kept up by means of a pump attached to the operation table, and worked by electricity.

His addition to that was "pumping air plus chloroform vapour"; that was to say, the artificial respiration apparatus was attached to an apparatus for producing anaesthesia. That was the usual method. On page 60 it was said:

> We can be almost certain that the dog has been also curarized, because it is absolutely still, with the stillness that is characteristic of the "Hellish Woorali."

His comment on that was that it was not curarized. In his notes it was stated that:

> The animal was absolutely motionless under artificial respiration through a chloroform flask giving between 2 and 3 per cent. of chloroform vapour to the insufflated air. I was present.

He had been measuring the percentages at about that period. Asked if that would be sufficient to account for the animal's being completely still, he said, Absolutely; and it would run the risk of being overdosed with that percentage. Asked as to the lecture on February 26th, he said it was on the circulation, on the effect of choline, which was the particular thing—one of the alkaloids, one of the pyomaines. "A dog injected with a substance derived from a lunatic" was a description, after a fashion, of choline; it was a substance derived from a lunatic. The animal was fully anaesthetized. He was absolutely certain there was no interval in which the dog was suffering. As to March 12th, when the lecture was described as "The only completely satisfactory method," and Miss Hageby began by stating, "He has doubtless found the remedy to be curare," the witness said he was absolutely sure no curare was used. His note was:

> Incorrect. The animal was under artificial respiration through the chloroform flask, getting between 2 and 3 per cent.

There was a remark on p. 134 to the effect that at the end of the lecture one other—the director of the laboratories—came to try the action of betain. He remembered that, because it was a preliminary trial of betain, and if any point had been made of that he would explain it. On p. 135 there was the following statement:

> When an anaesthetic or narcotic has been given to the animal the students are told so, or they see the anaesthesia being kept up by repeated doses of the anaesthetizing agent.

His note was "Not necessarily." On this occasion the anaesthetic was certainly given. Asked what he meant by "not necessarily," he said one did not mention it on every occasion. At every turn the animal was anaesthetized, but it might often happen that one did not mention it. He took it for granted. He did not think he would necessarily say so himself. In reply to further questions, he said his definition of light anaesthesia and deep anaesthesia implied that there was no sensitiveness to pain in light anaesthesia any more than in deep anaesthesia. He had given the following definition:

> The fingerpost between this first stage and the next is quite clear; if when the conjunctiva is touched the eye winks, the anaesthesia is "light," if the eye does not wink the anaesthesia is "deep."

In light anaesthesia all sensation and voluntary motion were lost. In deep anaesthesia the movements were more profoundly affected. Asked by Sir William Church as to a statement by a witness, who said that the fall in blood pressure which took place on the administration of chloroform was produced really by asphyxia and by that alone, and not by the chloroform itself, Dr. Waller said that chloroform of itself tended to produce a fall, but that asphyxia tended to produce a rise. Respiration and the heart were interfered with; the respiration activity diminished and the heart activity diminished, and the vasomotor centre relaxed, and there was a fall of the pressure and diminution all *pari passu*. He had no hesitation in saying that the action of chloroform did at times diminish the blood pressure. In reply to further questions, Dr. Waller quoted the following passage

* London: Printed for His Majesty's Stationery Office, by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin. (1908.)

from a lecture in which he dealt with *The Shambles of Science*:

If the two young ladies under whose name the publication entitled *Shambles of Science* has appeared, came simply to get "copy," the case is easily understood; but I am unwilling to believe this; and, indeed, the case looks to me much more like that of a pair of very ill-advised busybodies supporting each other through a trying ordeal for the sake of what they imagined to be an errand of mercy. I am sorry they came. I should have told them or any other non-professional women that they had better not come to such lectures, for they would run the risk of being misled and pained by experiments where no suffering to living animals was caused. Indeed, one would look very much askance at the young woman who should be able to look on while an animal was, as she imagined, undergoing torture. For the naked details of even a properly conducted vivisection, ignorantly considered, as must be the case if they are considered at all by an unprofessional person, appear revolting—so do the details of a surgical operation or of the slaughter of an animal for food, or of the proceedings in the dissecting room, and the *post-mortem* room. The minute and graphic account of such details by ignorant women is from every point of view mischievous and deplorable, and I very much regret that these two unfortunate ladies should have obtained the opportunity to torment themselves and their readers by their conscientious misrepresentations. Physiologists, when vivisection is necessary, do not take either pleasure or pain in its naked details, and they systematically take due precautions to fully anaesthetize animals required for experiment. The incredible motives sometimes attributed to physiologists by well-meaning people, and the unlimited adjectives and substantives by which they are held up to public reprobation can only be left to the antidote of their own excess. It is really labour lost to be constantly pleading "Not guilty" to this, that, or the other quite outrageous statement; we can only wonder that well-meaning people can so quietly harbour such infamous thoughts. Nor have we failed to question our own conscience. We well know that physiologists are subject to the common laws governing the human mind, and that habit must tend to engender inattention, and that inattention would be cruelty. We are on our guard against our own inattention, but knowing that we are human, we do not resent as indignantly as might be expected of us the reminder to be on our guard that is contained in the denunciations of our critics. We also know that there is evil in the appearance of evil, that things right and proper in themselves, but offensive of appearance, ought not to be exposed. And if exposure by even competent authority must offend and injure the imaginations of ordinary men and women, how much more injury and offence to the public mind will be committed by incompetent and self-deluded women who have entered what is, to their minds, nothing more than a chamber of horrors, where in reality the "quivering flesh" and "palpitating heart" and "tortured nerves" are more often than not only the living parts of dead animals, and where, in any case, an animal, even if alive, has been absolutely deprived of sensation. When one attempts to realize what kind of images must hold possession of an ignorant, prejudiced, and sensitive person—man or woman—who has seen, without understanding, he ceases to wonder at bad language, yet what can he hope to say that shall reach the mind of the deluded fanatics whose pity has been fanned to hatred by agitators. And can it be expected of us that we should say anything at all to persons who can employ sensational literature to poison the wells of human sympathy? In this laboratory—and no doubt in others—our very first concern is to administer anaesthetics properly when anaesthetics are required. And I make the deliberate statement that animals in this laboratory are anaesthetized with as great certainty and accuracy as are the patients in any hospital in the United Kingdom. Can it be necessary to tell you that we do not juggle with bottles of "colourless and odourless" liquid, as imagined and stated by the two ladies who have visited these "shambles"? You shall see for yourselves what takes place outside the lecture room whenever it is necessary to anaesthetize an animal. I have chosen cats for my demonstration, since the demeanour of these animals is most familiar to us.

Asked as to a statement by a witness that when artificial respiration had to be kept up, and for that purpose tracheotomy was performed on the animal, the tracheotomy was performed before any anaesthetic was administered, Dr. Waller said, "Not in my practice, most certainly." He knew of no laboratory in England in which tracheotomy would be performed on an animal before the administration of some anaesthetic. He would disapprove of such a practice. In reply to further questions, he said an animal immobilized by curare could be anaesthetized. He had never known curare administered without anaesthetics. If 2 per cent. of chloroform was present, an animal was of necessity under the influence of the anaesthetic. If artificial respiration was going on with that percentage of chloroform vapour he knew he was on the safe side as regards pain to the animal, and on the unsafe side as regards its life. He was more liable to lose the animal than to let it out of anaesthesia. Asked about Miss Hageby's description of the killing of the dog by blowing air into the jugular vein, he said he did not remember the details. They did not sound to him very likely, but what he should imagine might be the explanation of what she saw, or thought she saw, would be that with air in the veins convulsions happened, and in order to make sure, as any person would do, the lecturer said "Kill the animal," meaning simply to put the scalpel into the medulla. That would be one's natural action if one saw a convulsion on the part of an animal that had been so treated. It was common to have struggling when the air was in the vascular system. It was of the same nature as the struggles of asphyxia or anaemia. There was absolutely no sensibility to pain. Asked by Dr. Gaskell how he could tell when a sufficient amount of an anaesthetic had been given to prevent the animal from feeling pain, Dr. Waller said one's ordinary quick and practical test was the conjunctival reflex. The differences between the reflex and automatic movements and the convulsions were often very deceptive as indicative of conscious voluntary impulses; but still one would tell by the behaviour of the animal whether the movements were indicative of sensation or not, simply from their general character. Proceeding, he said that in the state of light anaesthesia one knew that the first movements to disappear in the case of a man were the obviously purposive movements, and one knew that when that happened there was no sensation; and one judged from the character of the movements that the animal was in an analogous state, having no sensation. But, as a matter of fact, his practice, and, he thought, the practice of most physiologists, was to go as far as the conjunctival reflex. Asked if, when complete abolition of the conjunctival reflex had once been obtained, a very considerable time elapsed in which no chloroform was given before any sensation of pain ever came back, he said, Yes. He agreed that there was a very considerable time after the conjunctival reflex had been abolished in which one might be perfectly certain that there was no sensation of pain; and he would go further: One knew that one could keep the animal anaesthetized; that if one had brought it down by 2 per cent., one could keep it there at 1½ per cent., 1 per cent., and a ½ per cent. as time went on. He had had an animal as long as twelve hours under anaesthetics, and at that time only a very low percentage indeed was wanted to keep it under. In reply to Mr. Tomkinson, he said he would not call morphine an anaesthetic, but a narcotic. It was a question of words again. He could imagine the stupor produced by morphine or alcohol being so profound as to amount to anaesthesia. He had kept cats under for a very long time; dogs he had kept in perfect anaesthesia for three or four hours. He had found no difficulty in anaesthetizing dogs. He had not lost a dog for several years. Asked about Mrs. Cook's statement to the Commission that she had witnessed baking and freezing of animals at the Imperial Institute, he said that no heating experiments were ever made in the laboratory. The only ones ever made were on reducing the temperature. The baking was pure imagination absolutely, and the freezing was never there. He noticed the temperature of the ice-chest at the time was noted as 8° Centigrade, and no animal was exposed to a temperature below the freezing of Fahrenheit.

(To be continued.)

ALDERMAN F. R. MUTCH, M.D., was the recipient on January 20th of an illuminated address from the Nottingham Medico-Chirurgical Society. Dr. Mutch, who has been in practice in Nottingham for some thirty years, has held a seat on the City Council for two-thirds of that time, and has been Chairman of the Health Committee for the past nine years. In view of his services to the city and the credit which they reflected upon the medical profession, the Nottingham Medico-Chirurgical Society determined some time ago to recognize them formally in the fashion stated.

IN the large seaport town of Karachi, the health officer, Dr. Kaka, D.P.H., induced the municipal scavengers to be inoculated with Haffkine's plague prophylactic. The greater number, that is, 1,114 out of a total of 1,206, were inoculated before the beginning of last plague season. At the close of the season it was found that the mortality from plague amongst the uninoculated was 11, and amongst the inoculated 3. To put the result in another way, if the 1,114 inoculated persons had suffered to the same extent as the 92 uninoculated, they should have had 133 deaths instead of 3, a difference of 96 per cent.

IRISH AND SCOTTISH DEGREES AND DIPLOMAS.

SIR CHARLES B. BALL took the chair at a well-attended meeting of the members of the Irish Medical Schools' and Graduates' Association and of the Scottish Medical Diplomates' Association held at the Hotel Cecil, Strand, on January 21st, to consider the exclusion of graduates of the universities and the diplomates of the Scottish and Irish Corporations from candidature for positions on the staffs of certain hospitals in England.

Dr. H. MACNAUGHTON JONES moved the following:

> That the present exclusion of all persons who do not hold certain qualifications from candidature for honorary positions on the staff of a public hospital is contrary to the public weal, and is a restriction which is not to the interest of the institution itself, excluding, as it does, all other candidates who may have exceptional claims to fill such positions.

The principle advocated had been accepted and approved in the three divisions of the United Kingdom on three occasions—at the annual meetings of the British Medical Association in Dublin (1887), Glasgow (1881), and Bournemouth (1890). It had received the approval of a Special Committee of the British Medical Association appointed to consider the question, and of the Select Committee of the House of Lords that had under its consideration the organization of the metropolitan hospitals. The BRITISH MEDICAL JOURNAL of February 4th, 1893, said that the efforts made to remove the invidious distinction which had come into existence in England had the warm support of the British Medical Association, which at three general meetings had condemned the monopoly by a large majority. It must at the outset be understood that Irish and Scottish graduates or diplomates did not complain that they were not appointed to English hospitals: it was that they were excluded from candidature though they held the higher degrees and qualifications of their universities and colleges. There was a rule which declared practically that they were not to enter within the sacred circle of favoured candidates for certain hospitals. At present no Scotsman or Irishman, no matter how well qualified by experience or original research he might be, who did not happen to hold the favoured English qualifications, could apply for an appointment in these hospitals, and the slur was publicly thrown in their faces by advertisement in the lay press. The two reasons given by those who defended the practice were first that these institutions were not State institutions; they were not on a par with the public services, military or civil; they had been endowed by private munificence and were supported by private donations and subscriptions, and those entrusted with the control of their maintenance and administration were entitled to make any rules or regulations they saw fit for their efficient conduct and welfare; secondly, that the rules requiring certain qualifications to be held by candidates were justified by the inferior standard of knowledge required from, and the lower ethical restrictions placed on, the possessors of all other qualifications. In regard to the first, it must be remembered that it never could have been the intention of the founders of those hospitals to limit their sphere of usefulness to the State, whether as a means of treating the sick poor or as affording opportunities for the study of disease and the discovery of new means of cure. When many of them were founded the conditions of medical education were widely different to what they were now, and the centres from which instruction and knowledge were to be obtained comparatively few, and situated widely apart, in England, London alone, in Scotland, chiefly Edinburgh, in Ireland, Dublin alone. It was natural that the authorities of the hospitals, animated as they were still by the views of their medical staffs, should impose restrictive regulations in regard to the qualifications of those seeking office; to secure such qualifications, residence was compulsory in one of the great centres of medical education. Those corporations had thus a monopoly in the supply of candidates—also the hospitals were closely associated with the teaching staffs of the schools. The interests of the corporation, the school, and the hospital alike demanded a close unity of all three. The reputation of each in attractiveness of its diploma, teaching, and the ability of the staff touched the financial prosperity of all three. Gradually, however, new centres of learning came into existence; facility through new means of intercommunication and transport enabled students to take that diploma which was most to their future interests and in accord with their circumstances at the time to obtain. Hospitals with teaching opportunities multiplied enormously. The State insisted on having its share in regulating the standard and character of the education required of those whom it took under its protection by registrable recognition. The State by Acts of Parliament interfered with the charters of the colleges by alteration and amendment, and, in the instance of the Royal College of Surgeons of Ireland, deprived it of the privilege of securing that appointments to certain hospitals in Ireland should be only held by those who possessed its diploma. Gradually, through the Medical Acts, they found the State taking a greater part in the scheme for the education of medical men, and also through its representatives on the General Medical Council making itself in a degree responsible for the efficiency of the institutions, whether schools or hospitals, on which that education depended, for every hospital recognized by the General Medical Council became part of the local school. They thus found that the condition of affairs to-day, when a triple qualification was demanded of registered practitioners, and when there were two grades of graduates and diplomates, was widely different from that which existed when the diplomates of the different corporations appropriated certain hospital appointments and the authorities of the hospitals acquiesced. It seemed, on the face of it, paradoxical that the higher degrees in medicine of any university should not confer the same privilege as an ordinary Membership Diploma of a College of Physicians, and that the higher degree in surgery to be obtained only by conforming to exceptionally severe conditions were to be ignored by a hospital authority, and to be looked upon as insufficient to entitle their possessors to hold hospital appointments. The State had the right to-morrow to enact that the hospital appointments in dispute should be open to men who possessed such qualifications as it considered adequate. And if the hospital authorities persisted in upholding that prohibition rule, then the demand for a State licence which would entitle its holder to become a candidate for any public appointment in the State would take a practical shape, and the diplomas of the corporations would become ornamental appendages which could be ignored or obtained at option. As to the second reason given for the rule—namely, that the character of the Scottish and Irish examinations was not on a par with the English ones, he should feel inclined to meet that with a simple denial, and say that the *onus probandi* rested on those who made the assertion.

Dr. A. J. HORNE (President of the Royal College of Physicians, Ireland), in seconding the resolution, said that he considered the examinations in Ireland and Edinburgh would favourably compare with any examination held in London. If they succeeded in enlisting in their services the medical and the lay press he thought that the particular object which they had met together to secure would soon be an accomplished fact.

Mr. AUGUSTUS P. HILLS said if the Governors of hospitals would take the trouble to find out that the different degrees had not the differences that they were supposed to have, a great deal might be done.

The CHAIRMAN said that the Scottish and Irish graduates were able to hold their own not only in entrance examinations but in their devotion to duty, which ensured their selection for the highest ranks of the profession. There was a sort of national spirit which tended to make them prefer a Scottish graduate for a Scottish appointment, and an Irish graduate for an Irish appointment, and an English graduate for an English appointment. Nobody quarrelled with that. But what they had a right to protest against was the statement that "you are not fit to become candidates." If that point were put plainly and temperately before the public, he thought it would end in what the associations so much desired to be carried out.

The resolution was unanimously adopted.

Dr. WALSH moved:

> That the advertisements in the columns of the lay press that honorary offices in certain hospitals are open only to those holding the diplomas of some particular corporation gives to the public the impression that such restrictive regulation is justified by the exceptional character of such qualification, which is not in accordance with fact.

Mr. John Lentaigne (President of the Royal College of Surgeons, Ireland) seconded the resolution. He held it was absolutely untrue that the restriction was justified by the exceptional character of the qualifications stated. He said without hesitation that the examination for the Fellowship of the Royal College of Surgeons in Ireland was as high and difficult an examination as that for the Fellowship of the Royal College of Surgeons of England. The public advertisements in the *Times* and other newspapers could not be interpreted in any other sense than as implying the inferiority of the bodies that were excluded. They cast a glamour on those other bodies—a glamour which was absolutely unjustified and undeserved. In Ireland this was called a boycott of Irishmen and Scotsmen in favour of certain corporations in London. These corporations ought not to require the support of such methods; they should have been only too glad to repudiate and refuse the advantages which accrued to them in that way. It was asked that the objectionable advertisements should cease. They had a right to stir up public opinion, to stir up Parliament if necessary, and he believed that Parliament would step in to stop the present state of things. If the hospitals did not set their own houses in order it would be done for them, and perhaps here might be more things done for them than they would like when the time for reform came.

Dr. Macan said that the stigma of the objectionable advertisements did not simply affect men who might or might not be candidates for hospital appointments, but, when conveyed in the advertisements of the lay press, it affected every practitioner in England who might derive his qualification from one of the Irish or Scottish bodies.

The resolution was carried unanimously.

Sir Thomas Gallwey, K.C.M.G., moved:

> That these resolutions be forwarded to such persons as the councils of the two associations may determine.

He thought that the opposition came from the lay persons on the corporations of the hospitals.

Dr. L. S. McManus (Direct Representive for England on the General Medical Council), in seconding the resolution, said that he was there as an Irish graduate of an extinguished university. The university might be extinguished but the individual members of it were very much alive, with plenty of reserve vitality and plenty of fighting power when occasion arose, when any injustice was inflicted upon them by their colleagues in England. It was not, he thought, quite accurate to say that the opposition came from the laymen on the boards of hospitals. He thought the usual procedure was this: The board of governors asked the medical board to send them up a certain number of names and the medical board carefully excluded Irish and Scottish colleagues. That was only confined to some of the larger hospitals and only confined to one or two corporations. As to the Poor Law of England the Irish had a very good look in, for any number of Irishmen occupied Poor-law offices throughout England. He was a member of the Battersea Council, and when the post of medical officer became vacant two years ago, forty medical men had a meeting and selected an Irishman, a Nationalist Catholic, to the exclusion of a great many Englishmen. So that the spirit of bigotry was not universal. But, as a rule, those bodies were not representative; they were run by a little clique who had resolved themselves into a sort of self-admiration society who were absolute monopolists and intended to keep the monopoly as long as they could. But he believed that retribution was coming, and when the one-portal system had become a fact the corporations would have a very considerable difficulty in maintaining their present position. Their associations had suffered in the past from a certain amount of idiotic pride. It had not been considered dignified to take the lay press into their confidence. An attack could be made through the lay press, and yet their associations never seemed to hit back through the lay press; they were too proud, and the people throughout the country were listening to all sorts of faddists, believing that the members of the associations were far worse than they were. He hoped they would take the lay press into their confidence, and that through its columns their grievances might be ventilated by some who could efficiently and wisely put them before the public mind. He felt certain that if they only appealed to the justice of Englishmen their grievances would very soon be remedied.

After Dr. Fitzgerald Powell, Dr. W. Douglas, and Dr. Norbury had spoken, the resolution was unanimously adopted, and the meeting closed with a hearty vote of thanks to the Chairman.

In the evening the members dined together at the Hotel Cecil under the chairmanship of Sir Charles M. Cuffe. Dr. H. Macnaughton Jones, in proposing the toast of "The Scottish and Irish Universities and Corporations," said that as far as the United Kingdom was concerned the birthplace of anatomy was Edinburgh. Sir Charles B. Ball acknowledged the toast, as also did Mr. J. Lentaigne, who asked for sympathy for the unfair treatment of the Royal College of Surgeons of Ireland. The toast of "The Irish Medical Schools' and Graduates' and Scottish Medical Diplomates' Associations" was submitted by Dr. A. J. Horne, and was replied to by Dr. Macan and Dr. D. Walsh. The health of "The Chairman" was given by Colonel James Moorhead, and the proceedings terminated after the Chairman had responded.

THE WORKMEN'S COMPENSATION ACT FROM A MEDICO-LEGAL POINT OF VIEW.

A discussion of considerable interest to doctors and lawyers who are concerned with the working of the Compensation Act was opened last week at the Medico-Legal Society, when a paper was read by Mr. Arthur S. Morley, F.R.C.S., entitled, Some Experiences of the Difficulties and Abuses of the Workmen's Compensation Act.

He explained that, while the Act was designed to provide relief for the genuine worker, it had imposed much hardship on employers by exposing them to the plots of lazy and dishonest workmen, aided by the less reputable members of the legal profession. He knew as a fact that it was the custom of some of the latter gentry to ascertain day by day from the receiving-room porters at hospitals the names and addresses of casualties, and to offer to take charge of the cases of injured men. Having placed every difficulty in the way of an amicable settlement to increase his own costs, a solicitor of this class would allow the case to be fought, with the result that the claimant only recovered a portion of the compensation, the remainder going to the solicitor. As a result, employers and insurance companies were inclined to settle rather than fight, for although the defence was often good, nothing could be extracted from the other side in respect of costs. The reader of the paper also drew attention to the extraordinary amount of malingering occasioned by the Act. Injuries to hands and fingers were often turned to profit. A man would pretend he could not get a proper grip as a result of a slight injury; and if his employers had no work of a light character to offer he was entitled to compension. It was impossible for the examining surgeon to swear there was no disability. The result was continuance of the compensation. Mr. Morley cited one extraordinary case of malingering which came within his own experience. A man had received an injury from which, as he alleged, total blindness had resulted. He was led into court by his wife. Mr. Morley examined him in the anteroom of the court, on behalf of the employer. When giving evidence Mr. Morley said that the man was able to see quite well. Asked whether he had used an ophthalmoscope, he replied No, and for the following reason. When testing the man's eyesight he threw a match on the floor, and asked the patient to pick it up. The patient groped about on the floor near the match, but said he was unable to see it. In the meantime Mr. Morley had knocked down a pin with which the patient had fastened his tie. He then noticed that when the patient was resuming his attire, and so off his guard, he picked the pin up off the floor without the slightest difficulty. These facts being proved, there was judgement for the employer! Dealing with the appointment of medical referees, Mr. Morley said that it was still quite rarely that the services of a medical referee were requisitioned. These gentlemen were not always very competent judges, since they were not yet accustomed to treating cases absolutely judicially. He explained that when the Home Office recently appointed referees it carefully excluded all candidates who, from their connexion with insurance companies or from their position as advisers to big companies, had had extensive experience of this class of work. The

reason for taking this course was to prevent the possibility of a referee having to judge cases in which his own company might be interested; but the result was that many of the men most experienced in examining these claims were excluded. Perhaps the most interesting part of the paper was that which dealt with the effect which the Act has had upon the employment of those who are physically defective. Experience had shown, he said, that in the case of a defective workman, sooner or later the conditions which existed would give rise to complications which might be made the basis of a claim for accident. Insurance companies were already beginning to find out that premiums must be raised unless careful medical examination was insisted on. One large railway company with which he was connected had all candidates for employment examined, and he had instructions to reject any men who had any condition which could conceivably bring about complications from which claims could arise, although their maladies were quite trivial and not incompatible with continued health and hard work for many years. One possible way out of the difficulty, which was undoubtedly telling on the working classes, would be to legalize the process of "contracting out" of the liability. Another suggestion he would make was that the responsibility of the costs of an unsuccessful claimant should be thrown upon the union or the solicitor who had taken up the case if the workman himself could not pay them.

Owing to the interest of the subject, the consideration of this paper was postponed until the March meeting of the society.

ERGOPHOBIA.

SURGEON writes: As a medical examiner under the Workmen's Compensation Act, I have read the article on p. 231 with no little interest. Let me say at the outset that I cannot conceive what employers of labour were about when they allowed such a one-sided Act to become law. Now that they are fully realizing this, they themselves are fast awakening to the fact that soon a condition of things will arise which must seriously interfere with the trade and prosperity of the country. As the Act stands, the employer is nothing but an exploited party to be shot at by all and sundry, a legitimate target to receive the fire, for the most part, of those who are too idle to try to work. In saying this I do not mean to imply that there are no such things as honest claims, and that for these the Act is not a right and proper one. But when this is granted there still remains the broad, solid fact that the general tendency is towards a lessened independence in any desire to return to work, and a loss of self-respect in the desire shown to make the term of their capacity extend to a period long after their condition justifies such a contention; in order to do this, medical certificates have to be produced—a matter about which there is in most cases not the slightest difficulty, especially if it be a club patient, for to withhold means trouble, and that often of a serious nature. Thus the merry game goes on, and the battle rages between fitness and unfitness, the aim, of course, being to extract a lump sum, which is often used neither wisely nor well, until, having got to the end, the interesting invalid thinks it best to resume work. As a medical examiner, I have always tried to impress upon employers that they should act, and act promptly, in all cases in which there is a difference of opinion between myself and the doctor in attendance as to capacity for work; and were a medical assessor appointed, as suggested, to sit with the judge on the demand of either party, no doubt great good would result. The difficulty would be to get a suitable man, one qualified for the work, and at the same time independent enough to give an unbiassed opinion. This means a State-aided appointment, with a fairly large retaining salary (which does not obtain at present), and, if thought proper, a reduced fee for each attendance at court. In any case, the amount offered should be such as would make it worth a medical man's while to lay himself out for this particular kind of work.

THE second congress of French-speaking doctors on physio-therapeutics will be held in Paris in April. Among the subjects proposed for discussion are the following: Physical agents (massage, Bier's method, *x* rays, hydrotherapy) in the treatment of varices and varicose ulcers; clinical and scientific disadvantages of the practice of physiotherapy by empirics; physical agents (electricity, radiography, massage, and re-education) in the diagnosis and treatment of infantile paralysis; physical agents (electricity, Bier's method, diet, light treatment, radiumtherapy) in the treatment of acne. The congress is under the scientific patronage of Professors d'Arsonval, and Bouchard, Gariel, Gilbert, Hayem, Huchard, Raymond and A. Robin, and Drs. Benit Barde, Lucas-Championnière, and Trissier.

THIRD INTERIM REPORT OF THE ROYAL COMMISSION ON TUBERCULOSIS.

THE third interim report of the Royal Commission on Tuberculosis is devoted to the investigations of Dr. F. Griffith on the presence of tubercle bacilli in the milk and faeces of cows not showing any signs of disease of the udder during life.

Commenting on Dr. Griffith's work, the Royal Commissioners remark that they have already, in their second interim report, stated that "a very considerable amount of disease and loss of life, especially among infants and children, must be attributed to the consumption of cow's milk containing tubercle bacilli." But whilst the danger arising from cows affected with recognizable tuberculosis of the udder is obvious, it was, in the opinion of the Commissioners, "undecided what is the danger, if any, attaching to the milk of tuberculous cows in which the udder presents no evidence of disease." This matter has therefore been investigated by Dr. Griffith.

SCOPE OF INVESTIGATION.

The faeces and the milk of naturally tuberculous cattle have been tested by means of inoculation and feeding experiments upon animals. Observations have been made on six milch cows. Three of the animals—B, C, and F—showed clinical evidence of tuberculosis, but in none of the six could any tuberculous disease of the udder be detected during life.

In order to obtain the faeces the action of the rectum was stimulated by the injection into it of air through a sterile glass tube, and the faeces were received directly into a pail, which was applied to the margin of the anal orifice. These precautions were necessary, since in one case, B, there was a purulent discharge from the vagina; and in three cases, B, C, and F, the *post-mortem* examination revealed extensive tuberculosis of the uterus. A portion of the faeces was rubbed up in a mortar with sufficient salt solution to moisten it, and pressed through muslin to form an emulsion. This material was inoculated into guinea-pigs by the intraperitoneal method. Care had to be taken as regards dosage. It was found that 0.5 c.cm. of the emulsion almost invariably caused death from acute peritonitis; but when a smaller dose, 0.05 c.cm., was used all the animals survived the immediate effects of the inoculation. The infectivity of the faeces was also tested by feeding both guinea-pigs and young swine, the latter animals being about 11 weeks old.

The milk of five cows, B, C, D, E, and F, was tested for the presence of tubercle bacilli, strict precautions being taken to ensure absence of contamination during its collection. A metal catheter, connected by pressure tubing to a flask, was inserted into the milk sinus of the udder, a separate apparatus being used for each quarter, and the milk was withdrawn from the udder by the exhaustion of the air in the flask. Before the insertion of the catheter each teat was washed with a solution of perchloride of mercury and with methylated spirit, and the opening was inspected to ensure that no faecal matter was pushed in with the catheter. With the milk thus obtained guinea-pigs, and occasionally rabbits were inoculated. The usual dose given to a guinea-pig was 10 c.cm. of uncentrifuged milk *plus* the deposit of 20 c.cm. of centrifuged milk. The milk of three of the cows was also administered, by feeding, to young swine.

RESULTS OF EXPERIMENTS.

The following is a summary of the experiments:

COWS MANIFESTLY DISEASED.

Cow B was a shorthorn, and had calved four weeks before the commencement of the observations. She reacted to tuberculin, was in poor condition, and had a short infrequent cough. *Post mortem*, the thorax was found to be very extensively tuberculous, and there was also tuberculosis of the alimentary tract and the uterus. The udder was found to be free from tuberculous lesions. The faeces of this cow were inoculated intraperitoneally into 25 guinea-pigs; 8 of these animals succumbed to septic infection, 1 remained healthy, and the remaining 16 developed tuberculosis. Several guinea-pigs were fed with faeces, but all remained healthy in spite of the fact that they received fifty times the amount of faecal emulsion which readily produced tuberculosis when inoculated intraperitoneally. Four young swine were fed with faeces, the total amount given to the four animals being 19.1 kilograms. They were killed after periods varying from 63 to 100 days subsequent to

the first feeding, and all showed generalized tuberculosis. The milk of Cow B in the first series of experiments was inoculated into 56 guinea-pigs, none of which produced satisfactory evidence that the milk injected contained tubercle bacilli. Subsequently the cow was inoculated with 20 c.cm. of tuberculin, and the milk was then tested again. Out of 16 guinea-pigs inoculated, 11 developed tuberculosis. Three pigs fed with the milk prior to the inoculation of tuberculin developed no disease.

Cow C., a Jersey, was emaciated and feeble, breathed hard, and had a frequent cough. Her temperature was febrile, and there was no rise sufficient to constitute a positive reaction after the inoculation of tuberculin. *Post mortem* she exhibited severe thoracic tuberculosis; the Peyer's patches of the small intestine contained caseous nodules, and there were several small ulcers in this part of the gut; the uterus was extensively tuberculous. The udder was normal. The faeces of this cow were inoculated into 30 guinea-pigs; 17 of them became tuberculous; the rest died too soon for tuberculosis to develop. Out of 14 guinea-pigs fed with the same material only 1 became tuberculous. The following experiment gives some idea of the large number of tubercle bacilli in the faeces of this cow. One gram of faeces was added to two litres of sterilized water, and 2 guinea-pigs were inoculated intraperitoneally, one with 1 c.cm., the other with 2 c.cm. of the mixture. Both animals developed severe general tuberculosis, the former dying in sixty-three days. A young pig, fed with 5.56 kilograms of the faeces, was killed forty-eight days after the first meal, and showed disseminated tuberculosis, with enlargement and caseation of the submaxillary and mesenteric glands. On three occasions the milk of this cow was tested upon guinea-pigs and rabbits; none of the animals in the first batch became tuberculous; on the second occasion tuberculosis was produced in 2 guinea-pigs; and in the third experiment 3 rabbits and 4 guinea-pigs became tuberculous.

Cow F was very emaciated and feeble, and was killed after she had been under observation for a few days. The *post-mortem* examination revealed severe generalized tuberculosis. In the left hind quarter of the udder, in the tissue forming the wall of the main sinus near the teat, there were four reddish-grey, caseating nodules, up to a pea in size. The rest of this quarter and the other three quarters were normal in appearance. The faeces produced generalized tuberculosis in guinea-pigs. The milk was inoculated into 32 guinea-pigs; 11 of these died prematurely; the others developed general tuberculosis, which in many instances was of a particularly severe type, and resulted in death in from eighteen to twenty-four days after inoculation.

COWS NOT MANIFESTLY DISEASED.

Cow A was a shorthorn heifer in good condition, and the diagnosis of tuberculosis depended entirely on the positive result of the tuberculin test. When killed, the animal was found to have an enlarged retropharyngeal gland which was cystic, with thick fibrous walls, and filled with breaking down caseo-necrotic substance. In the Peyer's patches of the small intestine there were three grey nodules containing caseous foci, two soft caseous nodules, and a small ulcer in which no tubercle bacilli could be demonstrated. A caseous mesenteric gland, a caseous gluteal gland, and four tubercles in the lungs were also noted. All other organs and glands were healthy. The faeces were used to inoculate and feed 41 guinea-pigs. None of these animals developed tuberculosis. Four young swine were also fed, the total amount of faeces administered being 25.6 kilograms; 3 of these animals proved to be free from tuberculosis; in the fourth the *post-mortem* examination revealed tuberculosis of the submaxillary glands, a caseous focus in one mesenteric gland, four caseating tubercles in the liver, and about thirty on the surface beneath the pleura of each lung.

Cow D was fat and in good condition, the diagnosis of tuberculosis resting entirely on the positive result of the tuberculin test. *Post mortem*, the lungs were found to contain discrete tuberculous nodules, several of which measured about 10 by 6 by 5 cm. On section, these were composed of softening, yellow, caseo-necrotic substance surrounded by fibrous walls. A few of the nodules had ulcerated into the bronchi, in which soft caseous substance was seen, and muco-pus could be squeezed out of many of the bronchioles. The bronchial and mediastinal glands were enlarged, caseo-necrotic, and gritty. There was no tuberculosis in any other organ or gland in the body. Out of 11 guinea-pigs inoculated with the faeces of this cow 2 became tuberculous; the faeces also produced tuberculosis in 2 out of 3 rabbits inoculated. Two swine remained healthy after feeding with the same material. The milk was tested upon guinea-pigs, but produced no evidence of tuberculosis.

Cow E was in very good condition, but gave a positive reaction to tuberculin. After death there were found in the lungs three small tuberculous nodules, and in the caudal mediastinal gland thirty to forty calcareous nodules up to a pea in size were discovered. In a suprarenal body there was a tubercle the size of a rape-seed in which tubercle bacilli were demonstrated. There was no tuberculosis elsewhere. Dr. Griffith failed to demonstrate tubercle bacilli in either the faeces or the milk of this animal.

GENERAL CONCLUSIONS.

In their review of the experiments summarized above, the Royal Commissioners remark: "The presence of tubercle bacilli in the milk of cows clinically recognizable as tuberculous confirms the opinion we expressed in our second interim report that the milk of such cows must be considered dangerous for human beings. The experiments which we have carried out with regard to the infectivity of the faeces of tuberculous cows were dictated by knowledge of the fact that dirt of various kinds from cows and the cowshed is almost constantly present in milk as it reaches the consumer. Cows suffering from extensive tuberculosis of the lungs must discharge considerable numbers of bacilli from the air passages in the act of coughing, and some of the bacilli thus expelled may find their way into the milk. But our experiments indicate that the excrement of cows obviously suffering from tuberculosis of the lungs or alimentary canal must be regarded as much more dangerous than the matter discharged from the mouth or nostrils. We have found that even in the case of cows with slight tuberculous lesions tubercle bacilli in small numbers are discharged in the faeces, while, as regards cows clinically tuberculous, our experiments show that the faeces contain large numbers of living and virulent tubercle bacilli. The presence of tuberculous cows, such as B, C, and F, in company with healthy cows in the cowshed, is therefore distinctly dangerous, as some of the tubercle bacilli which escape from their bodies in the excrement are almost certain to find their way into the milk."

LITERARY NOTES.

A THIRD edition of the Hungarian *Pharmacopoeia* is in preparation and will soon be published. The Hungarian portion of the text is already in type; the revision of the Latin text, which has been entrusted to M. Stephan David, a scholar of high reputation, is nearing completion.

In the *New York Medical Journal* Dr. Charles Greene Cumston gives an account of the career of Benjamin Franklin, from which it appears that he gave considerable attention to the study of medicine. He was the first foreign associate elected by the French Royal Society of Medicine. That society, which was founded in 1776, had among its members at the time such men as Daubenton, Jussien, and Vicq d'Azyr. In the *Transactions* of the society it is recorded that in 1776 Franklin presented a work by Dr. Perkins, of Boston, entitled *On the Nature and Origin of Epidemic Catarrhal Fevers*. Marat, who, as is now well known, was not a "horse doctor," as Carlyle calls him, but a physician, presented Franklin with a work on physics written by him. When the pretensions of Mesmer were to be examined the Academy of Science named Franklin one of the Commissioners. From a letter written to Sir John Pringle by Franklin it appears that he had used electricity in the treatment of paralysis. To other correspondents he writes on the inoculation of small-pox, and on solvents for stone in the bladder, and he was the author of papers on the cause of the heat of the blood in health and of the cold and hot fits of some fevers; on gout (from which he himself suffered grievously), and of a work entitled, *Some Account of the Success of Inoculation for the Small-pox in England and America; together with Plain Instructions by Which Any Person may be Enabled to Perform the Operation and Conduct the Patient through the Distemper*. This was printed in London by W. Strahan in 1759. It seems from the introduction to have been written in response to a request from Heberden for information as to the success of inoculation in New England.

The literature that in the last few years has been steadily gathering around the name of Napoleon shows no sign of diminishing. It is now announced that the French Society of the History of Medicine is about to institute an exhaustive inquiry as to the state of the great Emperor's health at the time of Waterloo. The investigation, it is stated, will be made by a committee of which the chairman will be Professor Landouzy.

The first part of a new periodical, devoted, as its name—*Archiv für die Geschichte der Naturwissenschaften und der Technik*—imports, to the history of science, has recently appeared. The editors are Drs. Karl von Buchka and C. Schäfer of Berlin, H. Stadler of Munich, and Karl Sudhoff of Leipzig. The publisher is F. C. W. Vogel of Leipzig. The *Archiv* will appear at irregular intervals, six parts forming a volume. The language is not limited to German. The first part contains contributions in French and Italian, besides German. The price of each volume will be 20 marks.

In the January number of the *West London Medical Journal*, Dr. S. D. Clippingdale gives an interesting account of Hammersmith quacks in the eighteenth century. He refers to the advertisement of one Neeler, a resident in King Street, which appeared in the *St. James's Evening Post* of November 24th, 1737, for a "noted girdle," the wearing of which would cure all skin diseases, even those of the feet and scalp. Dr. Clippingdale says this magic girdle is probably referred to in the following anecdote of Johnson, which was published in the *Morning Advertiser* of April 23rd, 1776:

As Dr. Johnson and Mr. Boswell were riding upon the Western Road they observed written up over a shop, "Girdles for the itch and all scurvy diseases," upon which the doctor observed, with his usual politeness and humour, "Boswell, if that man would advertise his medicine upon the Northern Road he would make his fortune and do good service to your countrymen."

Then there were two quacks, husband and wife, named Lougtherburg, who dwelt on Hammersmith Mall. Both professed to have a miraculous gift of healing, and naturally they proclaimed the fact to the public. They were besieged with crowds of applicants, sometimes, it is said, to the number of three thousand. The treatment was gratuitous, but tickets for places in the crowd were required, and the prices of these found their way into the pockets of the gifted healers. Their method was not limited to the laying on of hands, for Horace Walpole, in a letter to the Countess of Ossory, dated July, 1789, says:

Lougtherburg, the painter, is turned an inspired physician. His sovereign panacea is barley-water; I believe it is as efficacious as mesmerism.

A full account of these cures (says Dr. Clippingdale) was published in 1789 by a Mrs. Platt in a pamphlet having the following title: *A List of Cures performed by Mr. and Mrs. Lougtherburg of Hammersmith Terrace, without Medicine. By a Lover of the Lamb of God.* The Lougtherburgs should have lived in these days when they would doubtless be active members of the movement now being carried on by Mr. James Moore Hickson, the Rev. Percy Dearmer, Bishop Fallows of Chicago, and so many others who would probably take unto themselves the same title which the sacred prophetess of the ex-scene painter assumed. The vogue of the Lougtherburgs, it may be surmised, was not long, for the failure of one of their healings led to the storming of their house by an angry mob, and the healers folded their tents like the Arabs and silently stole away. We need not give any "modern instance" to point the moral of the story.

The Clarendon Press at Oxford has within the last few years published a good many medical books—a development which may perhaps be traced to the influence of Professor Osler. Its history may, therefore, be interesting to some of our readers. The following brief account is based on a detailed article which lately appeared in the *Times:* The tercentenary of the birth of Edward Hyde, the famous Lord Clarendon whose daughter became the wife of the Duke of York, afterwards James II, falls on February 18th of the present year. Clarendon was educated at Oxford, and in 1660 was elected Chancellor of the University. After his fall in 1667 he resigned the office. The first edition of his *True Historical Narrative of the Rebellion and Civil Wars in England* was published by the Oxford University Press between 1702 and 1704. With the profits derived from the publication the university built, in 1713, a new printing house near the Sheldonian theatre, where before that date a large part of the printing work of the university had been done. The name of Clarendon was attached to the new building. The copyright of the *History* remains perpetually in the possession of the university, to which the rest of Clarendon's MSS. were presented in 1753 by his great-granddaughters. In 1860 the profits of the *History* amounted to £10,000. The Clarendon trustees decided to employ the money to help the university to meet the demands of physical science; and in 1872 the Clarendon Laboratory for Experimental Philosophy was erected as part of the University Museum. The name of Clarendon is thus preserved at Oxford by the Clarendon Building, the Clarendon Press, and the Clarendon Laboratory. The Clarendon Building was the Clarendon Printing House from 1713 to 1830, when the new printing house was built in Walton Street, now known as the Clarendon Press. The Clarendon Building has still some connexion with the Press, inasmuch as the delegates of the Press hold their meetings in the room originally designed for that purpose. The Clarendon Building has just undergone an elaborate series of repairs, and at the present date its refaced walls give something like the impression they must have been made in 1713.

Nova et Vetera.

MODERN MEDICAL APHORISMS.

THE "Aphorisms" of Hippocrates breathe the highest spirit that should animate the practitioner of the art of healing and the clinical observer. In contrast with these may be placed the aphorisms of La Mettrie, the physician (seldom consulted, as Carlyle says) of Frederick the Great, which breathe the spirit of the shrewdest worldly wisdom. We cite them, not so much for the edification as for the amusement of our readers. Here and there, however, there are hints which may be useful to some simple-minded brethren who, for the lack of the knowledge that is generally learnt only by bitter experience, may find themselves at a disadvantage as compared with men much inferior to themselves. They are likely to be helpful to men of the type of "Lydgate," drawn with a master hand by George Eliot in *Middlemarch.* La Mettrie says:

Distrust your professional brother—*medicus medicum odit.* If you are in a fix lay the responsibility on the backs of the consultants. Never try an active remedy on a person of high position; it is a better that a great lord should yield to human destiny, even prematurely, than that the doctor should be compromised. In the case of consultations try to arrive on the scene a quarter of an hour before the others, in order that you may see the patient alone and gain his confidence while seeming to study his disease. Visit the patient during the time the remedy is displaying its effects; make some small change in the mode of administration; thus you will supplant not only one or two brother practitioners, but the whole Faculty. Take care to stand well with the surgeons and pay court to the apothecaries. Do not give medicines to those who do not like them. In the case of the others order only drugs that are anodyne, well known, and have not a bad taste. Do not pay too many visits; this would gain for you the reputation of being eager for fees. Unpunctuality will be excused if you plead the number of people you have to see. Always have the air of being busy. If you are asked out to dinner, arrive late and look as if you had been hurrying, and arrange that you shall be sent for at dessert. If women discuss the causes of a disease, do not contradict them but agree with them. If women advertise you, your fortune is made. Above all do not despise the support of ladies' maids and nurses.

These maxims will doubtless seem cynical to young men with lofty ideals of their profession. Some of them recall the arts of Sawyer late Knock-'em-orff, in which he was anticipated by no less a man than John Huxham, from whom, *via* Ferdinand Count Fathom, Dickens may have borrowed them. The touch as to making a slight change in the mode of administration reminds us of the window or arch which that eminent architect, Mr. Pecksniff, introduced into the plans drawn by his students, thereby stamping them with his own genius. We have heard a well-known physician, now no more, praised by lady patients for the "elegance" of his prescriptions; these contained water in the same proportion to the medicine as the sack bore to the bread in Falstaff's tavern bill. We have seen diagnostic *coups de théâtre* performed at the bedside—after careful preparation beforehand. In fact, there is nothing in La Mettrie's aphorisms but what is an important part of what is called "experience" in medical practice; and a man is not necessarily to be contemned as dishonest who uses these means to make real knowledge tell. If he has no knowledge, of course, that is another matter. It has been said, *Homo homini lupus.* This is certainly not infrequently true in regard to doctors. We complain—and justly enough—of the public. But after all, our worst enemies are those of our own household.

Another set of aphorisms, credited to Dr. Amédée Latour, may be compared with those we have cited. They are to the following effect:

The physician fusses, but it is the disease that leads him about. Life is short, patients are hard to please, the brethren are deceptive. Practice is a field of which worldly wisdom is the manure. A patient is like flannel; neither the one nor the other can be left for a moment without danger. The patient who pays his doctor is exacting; the patient who does not pay

him is a despot. Simplicity, modesty, truth! Charming things—everywhere else than by a patient's bedside where "simplicity" is taken to be hesitation; "modesty," diffidence of oneself; "truth," roughness. Medicine is the only profession in which lying is a duty. The doctor who goes away has the same chance as a lover of finding himself replaced by a substitute on his return.

As in the case of the other maxims already quoted, we do not wish to be understood as recommending these as embodying the highest perfection of professional morality. But that they are profoundly true few men who know the world will deny, and they may be commended to enthusiastic youths as useful prolegomena to all introductory addresses.

Medical News.

SIR WILLIAM GOWERS will give a lecture on unilateral optic neuritis from cerebral tumour at University College Hospital on Wednesday next at 4 p.m.

HIS EXCELLENCY THE LORD LIEUTENANT has accepted the invitation of the President and Fellows of the Royal College of Surgeons in Ireland to the annual college dinner on Saturday, February 20th.

HIS MAJESTY THE KING has been pleased to grant permission to Dr. George Ogilvie to accept and to wear the Insignia of Knight of the Royal Order of Isabel la Catolica, conferred upon him by the King of Spain.

DR. F. M. SANDWITH, Gresham Professor of Physic, will give four lectures at Gresham College on February 9th, 10th, 11th, and 12th, at 6 p.m., in which he will discuss Malta fever, diphtheria, and the life-work of Pasteur.

THE annual dinner of the Chelsea Clinical Society will take place at the Gaiety Restaurant, Strand, W.C., on Thursday, March 4th. Particulars can be obtained from Dr. K. R. Collis Hallowes, 104, Buckingham Palace Road, S.W.

THE Lettsomian Lectures at the Medical Society of London will be delivered by Dr. Sidney Martin, F.R.S., on February 1st, 15th, and March 1st, at 9 p.m. on each evening. The subject of the lectures is functional disorders of the stomach and intestines, their diagnosis from organic disease and treatment.

THE French Congress of Scientific Societies will be held this year at Rennes. Among the subjects proposed for discussion are: The relations of sociology and anthropology; healthy and cheap dwellings; alcoholism—the evil, its causes and remedies; tuberculosis and the means of avoiding contagion; high altitude and seaside sanatoriums; methods and disinfection against contagious diseases, and the results obtained in towns, rural districts and establishments in which disinfection is practised; the water supply of towns—the contamination of subterranean lakes; leprosy and pellagra in France; the part played by insects and especially the common fly in the dissemination of contagious diseases; hygiene of the school child.

IN the course of his presidential address to the Royal Meteorological Society on January 20th, Dr. R. H. Mill remarked that it was popularly held that sunshine, heat, and dryness were necessarily good, and rain and cold necessarily bad. These current and erroneous beliefs affected the meteorological departments maintained by many municipalities so strongly that to be above the local average in the "bad" elements and below it in the "good" was held to be a disgrace never to be acknowledged if it was possible to deny it. He had even heard of instances in which reports were suppressed in order to obviate misconception, and of others in which instruments were moved to obtain more agreeable records.

THE first Negro Congress on Tuberculosis was (we learn from the *Medical Record*) held at Tuskegee, Alabama, during the third week in December, 1908. On the opening day, "Health Sunday," seven meetings were held, and in the course of the next six days the 1,500 students of the Tuskegee Institute attended the evening meetings, at which addresses, illustrated by stereopticon views, were delivered. It was decided to establish a permanent tuberculosis committee at Tuskegee, with similar committees at other leading negro institutions. A propaganda will be set on foot in the press that circulates among the negro population, and the State Boards of Health will be asked to supply printed matter about the disease and the means of preventing its spread.

A REPORT by Dr. Masson on the administration of the solation hospital and camp during the recent outbreak of bubonic plague in Trinidad has been issued. In the period May 30th to September 28th there were 19 cases with 15 deaths, giving a death-rate of 78.9 per cent. This would indicate that the disease was of a virulent strain, though no frankly pneumonic cases were seen. The report says little about infection of the rats in the town, but this will probably be dealt with by the medical officer of health later. It will largely depend on this whether the disease will break out again, and Thompson's report on a seventh outbreak of plague at Sydney should be well studied by the authorities in Trinidad. There is nothing unusual in the clinical details and pathology of the cases reported on; they are typical of ordinary bubonic plague.

LORD ROBERT CECIL will preside at a dinner of the staff and students of the London School of Clinical Medicine at the Savoy Hotel on Friday, February 19th. Among those who have promised to attend are Sir Thomas Barlow, Bart., K.C.V.O., Sir W. J. Collins (Vice-Chancellor of the University of London), Sir William Watson Cheyne, C.B., Sir William Church, Bart., K.C.B., Dr. J. F. Goodhart, Admiral Swinton C. Holland, Sir Malcolm Morris, K.C.V.O., Sir Richard Douglas Powell, Bart., K.C.V.O. (President of the Royal College of Physicians), Colonel W. B. Leishman, R.A.M.C., Inspector-General James Porter, C.B. (Director-General of the Medical Department of the Royal Navy), Lord Ridley, Mr. A. W. Mayo Robson, Sir Thomas Smith, Bart., K.C.V.O., and Professor Starling.

A QUARTERLY court of the directors of the Society for Relief of Widows and Orphans of Medical Men was held on January 13th at 5.30 p.m., Dr. Blandford, president, in the chair. Fifteen directors were present. The deaths of three members were reported. among them being that of Sir Henry Pitman, a vice-president of the society. A vote of condolence to Lady Pitman was passed from the chair. Three new members were elected. A sum of £528 had been distributed among the annuitants of the charity as a Christmas present, each widow receiving £10, each orphan £3, and each orphan on the Copeland Fund £5. Since the last court one of the annuitants of the charity had died; her husband had paid in subscriptions £33 12s., and died in 1855; since that date his widow received in grants from the society the sum of £3,300. This is a most striking instance of the advantages of joining the society. The sum of £1,242 10s. was voted for half-yearly grants to the widows and orphans at present on the books of the society. Relief is only granted to the widows and orphans of deceased members, and during the past three months five letters had been received from widows of medical men left penniless asking for relief, but this had to be refused, as their husbands had not been members of the society. Membership is open to any registered practitioner who at the time of his election is residing within a twenty miles' radius of Charing Cross. Full particulars and application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W. The invested funds of the society now exceed £100,000.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on January 15th, Dr. de Havilland Hall in the chair. In accordance with custom, at the first meeting of the year special reports on the cases of those members who seem to be unlikely to be ever able to resume professional work were examined, when it was determined to make provision for chronic illness. It was foreseen that this would involve a considerable outlay, but the number of chronic cases has increased more quickly than was anticipated, and now, numbering over 40, they require an outgo exceeding £3,000 per annum, and at each valuation of the society's business a substantial special reserve has been made in respect of them. Five years has elapsed since the last valuation, and the actuaries are now engaged in estimating the necessary reserves for the business. The amount required for the chronic cases is growing very large, and this part of the business bids fair to become one of its most important features. Although last year the ordinary sickness claims amounted to rather more than the expectation, they have generally shown a margin in favour of the society. When the report is presented to the members at the annual general meeting to be held in May next, it will be found that both during the year 1908 and during the quinquennium of which it is the final year, the financial strength of the society has grown in a satisfactory manner. Prospectuses and all further particulars on application to Mr. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

British Medical Journal.

SATURDAY, JANUARY 30TH, 1909.

TUBERCULOUS MILK WITHOUT UDDER DISEASE.

THE Third Interim Report of the Royal Commission on Tuberculosis (p. 291), based on the experimental inquiries of Dr. F. Griffith regarding the presence of tubercle bacilli in the milk and faeces of cows affected with tuberculosis, but without disease of the udder, affords an important practical corroboration and amplification of the findings published by the Royal Commissioners in 1907. They then stated, in their Second Interim Report, that "there can be no "doubt but that in a certain number of cases the "tuberculosis occurring in the human subject, "especially in children, is the direct result of "the introduction into the human body of the "bacillus of bovine tuberculosis; and there also "can be no doubt that in the majority at "least of these cases the bacillus is introduced "through cow's milk. Cow's milk containing "bovine tubercle bacilli is clearly a cause of "tuberculosis, and of fatal tuberculosis in man." After pointing out that the demonstration of tubercle bacilli in cow's milk may sometimes be a matter of difficulty, the Royal Commissioners proceed: "There is "far less difficulty in recognizing clinically that a cow "is distinctly suffering from tuberculosis, in which "case she may be yielding tuberculous milk. The "milk coming from such a cow ought not to form part "of human food, and indeed ought not to be used "as food at all. Our results clearly point to the "necessity of measures more stringent than those at "present enforced being taken to prevent the sale or "the consumption of such milk."

In this clause of their report the Royal Commissioners in no way indicated that the danger was confined to such tuberculous animals as exhibited recognizable disease of the udder. Farmers, however, have been desirous of putting this limited interpretation upon the Commissioners' verdict, and have been endeavouring to find some support for this attitude by appeal to statements contained in the report of a previous Royal Commission on Tuberculosis (1895). This Commission remarked that "according to our "experience, then, the condition required for ensuring "to the milk of tuberculous cows the ability to pro-"duce tuberculosis in the consumers of their milk is "tuberculous disease of the cow affecting the udder. "It should be noted that this affection of the udder is "not peculiar to tuberculosis in an advanced stage, "but may be found also in mild cases." An even stronger expression of opinion in favour of the farmers' view was published by Sir John McFadyean in 1901.[1] He then stated that "not every cow that is tuberculous "gives milk containing tubercle bacilli. It is true that "opinions with regard to this point are not absolutely "unanimous, but there is ample evidence to justify the "assertion that, as a rule, the milk is not dangerous "until the udder itself becomes diseased. The experi-"ments pointing to an opposite conclusion form only a "small minority, and the results obtained in most of "them were probably due to carelessness on the part "of the experimenter. . . . The important question, "therefore, is not what proportion of milch cows are "tuberculous, but what proportion of them have "tuberculous udders."

The Third Interim Report of the present Royal Commission removes ambiguities and previous misconceptions on this point. Dr. Griffith's researches, fully accepted and endorsed by the Royal Commissioners, conclusively show that both the milk and the faeces of cows clinically tuberculous, but with no disease of the udder, are liable to contain living and virulent tubercle bacilli, and often contain them in very large numbers. Every person acquainted with the conditions which usually obtain in cowsheds used for milking purposes will readily understand that the process of milking is conducted in such a way as to make contamination with particles of faecal material the rule rather than the exception; the danger of introducing tubercle bacilli into the milk when these bacteria occur in the intestinal tract is, therefore, always present, and is a grave menace to the health of the consumer.

Hitherto English authorities have lagged behind investigators in other countries, notably Germany and America, in realizing these dangers. In 1899, for example, Rabinowitch and Kempner published an important investigation on the milk of cows reacting to tuberculin. They examined the milk of 14 animals, only one of which exhibited disease of the udder manifest by physical examination; but in ten out of these fourteen they succeeded in proving that tubercle bacilli were present in the milk which the animals yielded.

In 1907 Schroeder and Cotton published in a report to the American Bureau of Animal Industry (Bulletin, No. 99) an interesting series of cases in which they showed that tubercle bacilli are disseminated with the faeces of tuberculous cattle, and that this dissemination occurs not only with visibly diseased animals, but also with those in which the diagnosis of tuberculosis depends entirely on the application of the tuberculin test. In the same year Dr. Mohler, Chief of the Pathological Division of the American Bureau of Animal Industry, reviewing the evidence which had been accumulated on this subject, wrote as follows: "That milk coming from a tuberculous udder "is capable of transmitting the infectious prin-"ciple is conceded by all who have given the "subject any consideration. It has been equally "established that in advanced generalized tubercu-"losis the udder may secrete tubercle bacilli without "showing any indication of being affected. Careful "experiments performed by trained and eminently "responsible investigators have also demonstrated "beyond reasonable doubt that tubercle bacilli at "certain times may be present in the milk of cows "affected with tuberculosis to a degree that can be "detected only by the tuberculin test, so that in a herd "of cows in the various stages of tuberculosis it is to "be expected that some of them will secrete tubercu-"lous milk, which, when mixed with other cows' "milk, makes the entire product dangerous." In view of the fact that Dr. Mohler's own experimental investigations on this subject are justly recognized in America as being thoroughly reliable and of high practical significance, this expression of his opinion is well worth consideration.

We are glad to find that the serious attention of bacteriologists in this country has now been turned to

[1] *Address on Tubercle Bacilli in Cow's Milk as a Possible Source of Tuberculous Disease in Man.* Trans. Brit. Congress on Tuberculosis, vol. i, p. 83.

the importance of these problems. The number of cows investigated by Dr. Griffith is relatively small, but his results are positive, and the conclusions deducible from them are unambiguous; taken in conjunction with the work already placed on record in other countries, they furnish an incontrovertible proof that the milk of clinically tuberculous cows is, even in the absence of udder disease, a serious danger to human health.

With regard to cows apparently in perfect health but yielding a positive reaction to the tuberculin test, Dr. Griffith's experiments only deal with three animals. In two of these he was able to demonstrate the presence of tubercle bacilli in the faeces, but in none of the three has he been able to state that they occurred in the milk. From such a limited number of cases it is impossible to generalize; others who have made more extensive observations apparently find that tubercle bacilli may occur not only in the faeces but also in the milk of these physically healthy but tuberculin-reacting animals. A very much larger accumulation of experimental statistics must be provided before reliable conclusions can be drawn as to the magnitude of this danger. Nor does it appear possible, at least until the extensively tuberculous beasts have been eliminated from our milch herds, to attempt to enforce the exclusion of animals which are in the early stage of the disease, where diagnosis can only be established by the tuberculin test.

Our Government has been expending money on scientific research, which has led to results of immediate practical importance. It now rests with our legislators to provide a basis for administrative measures which shall safeguard the public from the risks of contracting disease by the consumption of milk obtained from cows seriously affected with tuberculosis, whether or no the udders of these animals be recognizably tuberculous. This requirement is obviously necessary; but in view of the appallingly extensive prevalence of tuberculosis amongst cattle, it does not appear possible at present for the Legislature to proceed further.

THE STANDARDIZATION OF DISINFECTANTS.

WITH unfailing regularity the medical journals of this and especially other countries publish articles on new antiseptics and disinfectants. From time to time fresh claims are put forward for this or that drug or compound, until the number of preparations for which disinfectant properties are claimed bewilder the medical, to say nothing of the lay, mind. In addition to the difficulties which arise from the actual number of preparations, that arising from the want of uniformity of methods of standardization has to be taken into account, and it is in regard to this matter that the greatest confusion has arisen. But even if a uniform method were introduced into daily practice, there would be no guarantee of the value of any given disinfectant, unless it could be scientifically proved that the method really measured, within the limits of reasonable experimental error, the disinfectant capabilities of substances under the conditions in which such disinfectants were used.

This want of uniformity led Dr. Martin, Director of the Lister Institute, to organize some two years ago a thorough investigation of the subject. The nature of the process of disinfection was studied, in the first instance by Miss Chick, in the institute's laboratories,[1] with the result that a complete analogy was found to exist between the process of disinfection and a chemical reaction. This research enabled the author to enunciate certain general laws of disinfection, and to determine how far the process is modified by variations in the concentration of the bacteria and of the disinfectant, and in the temperature at which the tests were applied. The laws thus determined were found, rather unexpectedly, to be capable of being expressed by a simple formula.

Starting from the foundation afforded by this accurate knowledge, Dr. C. J. Martin and Miss Chick proceeded to study the means of applying standards to disinfectants. Of the methods hitherto used in bacteriological laboratories for standardizing disinfectants, the thread method of Robert Koch, the garnet method of Paul and Krönig, and the drop method known as the Rideal-Walker represent those with the most scientific basis. The trustworthiness of Koch's method of testing the antiseptic by applying it to silk threads on which anthrax spores have been dried is challenged, on the ground that it demands a higher standard of efficiency than is necessary. Apart from this, a perusal of the paper to which we have referred demonstrates other defects in this method. Again, the garnet method cannot be accepted as satisfactory, as the conditions are artificial and not in the least analogous to those obtaining in practice. The Rideal-Walker method, while superior to the two others, needs, in the opinion of the authors, modifications to satisfy the requirements of a scientific test. In the Rideal-Walker method the temperature was kept more or less constant, and the number of bacteria per unit volume as well as their degree of resistance was not allowed to vary. Martin and Chick insist on the importance of keeping these conditions as constant as bacteriological methods will allow, and, further, lay great stress on the necessity of making the time of disinfecting the same. The constants employed in their experiments are, therefore, temperature, concentration of bacteria, virulence and resistance of bacteria, culture medium, and time.

It is shown that among the vegetative organisms considerable variations in resistance occur, and the resistance of virulent germs is not quite identical with that of old strains of the same micro-organism. The resistance to phenol of spore-forming microbes is from 17 to 25 times greater than that of vegetative organisms. Practically, phenol and emulsified disinfectants are too feeble for use with sporing germs, and only the metallic salts are efficient germicides for this purpose.

The next problem attacked—the determination of the conditions under which the test, with constant temperature, number of bacteria, medium and time, is to be carried out—opened up a much more debatable chapter, and the solution offered, even if not absolutely ideal, is one which must be regarded as highly satisfactory. To fix the germicidal value of a disinfectant by its action in aqueous suspensions would practically be to limit the applicability of the method to the disinfection of surgical instruments. Disinfectants are, however, mainly used for the treatment of infected excreta, sewage, etc., when, as in nearly all other circumstances under which disinfectants are used—such as the cleansing of wounds, the disinfection of furniture and dust-laden objects, and the streets—the disinfectant has to act in the presence of organic matter. Objections have been raised to testing disinfectants in the presence

[1] Harriette Chick, D.Sc., and C. J. Martin, M.B., D.Sc., F.R.S., The Principles Involved in the Standardization of Disinfectants and the Influence of Organic Matter upon Germicidal Value, *Journ. of Hygiene*, vol. viii, No. 5, 1908, pp. 655–697. See also p. 286 of this issue.

faecal matter, and the authors state that when employed in their natural condition marked variations occur, which destroy the value of the test. Dried and finely divided faeces, however, were found to yield constant results, and it was discovered that it was the particulate condition rather than the composition which was of moment.

The experiments reveal some interesting facts with regard to the germicidal values of the various types of disinfectants. Taken broadly, disinfectants may be divided into three classes: The metallic salts, the dissolved phenols, and the emulsified tar acids. In comparing the phenol coefficient in the presence of organic matter of these groups, or rather of certain types of these groups, with the phenol coefficient when tested in water, striking differences were met with. The action of the metallic antiseptic salts, as would have been expected, on organic matter greatly interfered with the action on the bacteria and the concentration of mercuric chloride required to fulfil the requirements of the test in the presence of dried faeces was ten times that needed when water was used. Miss Chick had previously shown that the concentration of Hg $++$ ions, and not that of the mercuric salt determines the germicidal power. This observation, however, does not indicate that the efficiency of mercury is lessened ten times by the presence of organic matter, since the concentration of mercury $++$ ions is only increased slightly under these conditions. At the other extreme, the phenols only lose about 10 per cent. of their efficiency in the presence of faecal matter. Between these two extremes come the emulsified tar acid preparations and the soluble cresols. The finer the emulsion the greater is the loss of germicidal efficiency in the presence of faecal matter. In other words, all forms of organic matter appear to have the power of lessening the efficiency of disinfectants, the diminution being least marked in the phenols and more marked in fine emulsions of the tar acids than in the coarse emulsions. The authors explain this loss of efficiency on physical and not on chemical grounds. The loss is to a great extent due to adsorption of the emulsion upon the surfaces of the particles of organic material. The same process appears to play an important part in the actual disinfecting action of the emulsions. In another paper,[2] the same authors investigate the germicidal action of the tar acid preparations as emulsions and as solutions. The active principles of these preparations when dissolved have less disinfecting power than they possess as emulsions, and this was shown to be due to the adsorption of the emulsified tar by the bacteria.

Critics will search for objections to the method of standardizing disinfectants described by Drs. Martin and Chick, for there can be no doubt that if introduced as a normal standard, many reputed disinfectants must lose much of their reputation. The objection to the presence of faecal matter is certain to be raised, as it has already been raised. But no valid argument can be set up if the results obtained by these most careful and capable workers are confirmed. It is to kill germs in the presence of faecal matter that disinfectants are chiefly required, and dried faecal material from different sources has yielded approximately the same results. No rational argument can be adduced against making the temperature and time constants, since every scientifically-minded person realizes that no workable results can be obtained with more than one variable. No matter what inconveniences may be caused by the upsetting of old ideas and the introduction of new ones, the work is of the utmost importance, and must be regarded as worthy of full consideration by all those concerned in hygiene, since the welfare and safety of the public in no small measure depend on the answer to the question, What is the best disinfectant to be used for a specific purpose?

[2] Harriette Chick, D.Sc., and C. J. Martin, M.B., D.Sc., F.R.S., A Comparison of the Power of a Germicide Emulsified or Dissolved, with an Interpretation of the Superiority of the Emulsified Form, *Journ. of Hygiene*, 1908, vol. viii, No. 5, pp. 698-703.

THE BRITISH MEDICAL BENEVOLENT FUND.

THE British Medical Benevolent Fund deserves the strongest support of the profession and of the public. To bring this home to both is the object of the meeting to be held on February 9th at the Royal College of Physicians. The chair will be taken by the President of the Fund. An address will be delivered by the Right Reverend the Lord Bishop of Oxford, who will be supported by the Right Honourable the Lord Mayor of London, the President of the Royal College of Physicians, and others. Better representatives could not have been found. The Bishop of Oxford is the son of Sir James Paget, who was for many years the President of the Fund. The Lord Mayor is the recognized leader of all national movements in the cause of charity, while Sir John Tweedy and Sir Richard Douglas Powell well represent the medical profession. The Fund was founded in 1836, so that for upwards of seventy-two years it has continued its beneficent work. It has slowly accumulated invested funds out of the income of which it now supports 126 annuitants and spends in this department about £2,500 annually. No candidate is eligible for an annuity till past the age of 60 years. Many most distressing cases, however, occur at a much earlier age, and for these means of relief have to be found in the subscriptions and donations of the year. These fluctuate and can only be approximately forecast. For this reason the grant department of the Fund is a constant anxiety to the managers, for the Fund cannot spend what it has not got; its capacity for good is limited by the contributions of the year. If every medical man would make even a small subscription every year the income could easily be doubled. The need for this Fund is most strongly recognized by those who themselves know best the hard struggles of early professional life, and it is from the medical profession itself that the main support of the Fund comes. Little is given by the public at large. Yet there is no profession which does so much for the public, in public and in private, with so little or no remuneration. The medical profession has therefore a just claim upon public consideration which no other profession can make in equal degree. To bring this prominently forward is the second object of the meeting. The profession itself can show that it is in earnest, not alone by contributing as freely as it can afford, but also by using its influence in every way that offers to bring the claims of the Fund before those of the public who are likely and able to help it. There is no doubt that the work and objects of the Fund only require to be known and realized for the financial support which is so necessary to be forthcoming. Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, London.

"PRAYER AS AN INSTRUMENT OF MURDER."

OUR conjecture as to the sex of the writer of the extraordinary document published in the JOURNAL of January 23rd was correct. "M. Cowan" turns out to

be a woman who is described as "an Irish lady of "means," and who is said to be a member of the London Antivivisection Society. Mrs. Cowan herself, according to a correspondent who is quoted by the *Observer*, is quite unrepentant. She says, however, that she does not pray for the death of the vivisector but for his "removal." Yet she speaks of a vivisector "dropping," apparently as the result of "earnest prayer." "Removal," it may be remembered, was the euphemism employed by the "Invincibles," who vainly tried to murder Mr. W. E. Forster but succeeded in "removing" Lord Frederick Cavendish and Mr. Burke. Mrs. Cowan's idea of "removal" is, she explains, slight paralysis or the inheritance of a fortune that would enable the vivisector to settle down in the country. Well, Pasteur was more than slightly paralysed and yet continued his work, while several prominent vivisectors are men of considerable private fortunes that would enable them to live in idleness if the thirst for knowledge did not consume them. Mrs. Cowan obviously knows as little about men of science as she does about their work. It is amusing to note how the antivivisectionists are tumbling over each other in their eagerness to repudiate this too candid member of the fraternity. Mr. Sidney Trist states that his society is in no way responsible for the circular, the issue of which it deplores. Miss Woodward, Honorary Secretary of the Society of United Prayer for the Prevention of Cruelty to Animals, declares that it is highly unlawful to pray for any one's death. She goes on gravely to say that Mrs. Cowan's letter was considered at the last committee meeting of the society, "when one of our "members, Miss Burgess, remarked very truly that an "unrepentant vivisector dead might do more harm to "the community than a living vivisector. We can "control the actions of the living, but we do not know "what evil influences may be set at work by the "uncontrolled spirits of the dead. It is at least a "curious fact that our work was never so severely "attacked as shortly after the death of several well-"known vivisectors." This is an aspect of the vivisection question which is quite new to us, and opens a new vista of enterprise for the opponents of that method of research. Mr. Stephen Coleridge, in a characteristic letter, states that both he and his society are entirely unconnected with the circular. He professes, however, to be afraid lest its transmission to the vivisectors may not impossibly lead to retaliative efforts of a similar nature having for their object his removal, and he appeals to all who support his efforts to defend animals from vivisection to make precatory efforts in his defence in order that he may not fall under the malign influence created by the force of malevolent suggestion which may possibly be exercised against him by the vivisectors and by Lord Cromer's earnest associates in the Research Defence Society. Is it that he might be better able to guard himself against this "malign influence" that Mr. Coleridge recently applied to be enrolled as a member of the society? But Mr. Coleridge may be comforted; no one but himself takes him quite seriously, and vivisectors have no time to spare for the contemplation of his devices to keep himself well in focus on the stage whereon he struts and frets his hour, amid so many jealous rivals, for the admiration of the populace. For instance, there is Mr. Bernard Shaw, whose clowning, though poor enough in itself, is more amusing than the Malvolio-like solemnity affected by Mr. Coleridge. Mr. Shaw says "the genuine "vivisectionists would be the last people in the world "to protest against an experiment so interesting, so "important, and so thoroughly scientific in method." Mr. Shaw's notion of scientific method may be gathered from his style of argument on the many subject with regard to which he so often comes forward to enlighten the public mind. We can assure him that no "genuine vivisectionist" would object to being prayed against by persons of the type of Mrs. Cowan. But fanatics do not always confine themselves to prayer; and, assuming that Mrs. Cowan is as harmless as she is silly, there are, as we have pointed out, persons to whom what Mr. Coleridge calls her "minatory suggestions" might move to the use of more carnal weapons.

PHYSIO-THERAPY.

CONSIDERING the great developments that have taken place during the last ten years in the application of physical means to the treatment of disease, it would be surprising if in Germany, where every department of professional study possesses its special organ, physical treatment should be content to remain unrepresented. Special establishments with all the necessary apparatus for the physical treatment of diseases have been opened in many of the great centres of medical teaching, and the new *Jahrbuch* devoted to physical methods of treatment is edited by Professor E. Sommer, the able Director of the Physical Polyclinic at Zurich.[1] Probably one reason why the value of these means of treatment has been more generally recognized by the medical profession in Germany and German-speaking countries than elsewhere has been the great popular success of the methods advocated under the name of Naturheilkunde or Natural Methods of Healing, which include practically all means of treatment except the administration of drugs. As the so-called nature-curers are for the most part unqualified and irregular practitioners, it is highly desirable to let the public know that the profession takes account of and employs in a scientific manner all that is valuable in their system. There is ground to fear that if the medical profession in this country stands apart from the scientific use of physical means these will fall into lay hands and be made a cover for the quack, instead of being under the direction of regularly educated scientific practitioners who are not only conversant with their practical application but have studied scientifically the diseases for which they are suitable and are able to give rational reasons for their use. Some of these means have not received from us the attention they deserve, and are regarded with prejudice by many who have heard of them only in association with some objectionable form of quackery. This is especially true of what may be called medico-mechanics or the treatment of disease by mechanical forms of massage and movement, often spoken of as the system of Zander. Zander Institutes for the treatment of disease by mechanical means exist in most large centres of population and the chief health resorts of the Continent, but in England the establishment at Bath is almost the sole example. The Yearbook contains articles on the treatment of disease by baths, including mud-baths and the use of "fango," a volcanic mud, electro-therapeutics, medical gymnastics, sun-baths, hydrotherapy, massage, light treatment (said to be superior to radium), x and other rays, and high-frequency currents. Dr. Jungmann gives a critical account of the progress in the use of light in the treatment of disease, and describes the various modifications, rational or fanciful, which have been introduced into it, not always with benefit. Kromayer and Dyck have made out a good case for the quartz lamp invented by the former; they claim, not

[1] *Jahrbuch ueber Leistungen und Fortschritte auf dem Gebiet der physikalischen Medizin.* Begründet und herausgegeben von Professor Dr. Ernst Sommer, Direktor der Universitätspoloklinik für physikalische Therapie in Zurich. 1 Jahrgang. Leipzig: Otto Nemnich. 1908 (Roy. 8vo, pp. 440. M.10.)

only that it is simpler, but also, that cases have been cured which had been unsuccessfully treated by the Finsen lamp, that the duration of treatment is generally shorter, and that good results have been attained not only in lupus but in naevi, alopecia areata, and acne rosacea. Professor von Leyden of Berlin has contributed a short article in which he urges that the modern physician must be prepared not only to prescribe drugs, but to correct hygienic mistakes, to regulate diet, modify surroundings, and recommend occupation, to employ apparatus for the application of light, heat, cold, or electricity, or medico-mechanics; to send his patients to special places for treatment, to homes of rest and sanatoriums, to concern himself with insurance schemes against sickness, accidents, and old age; in fact, to consider many questions with which formerly he had nothing to do. It is impossible to stand aside and to regard these matters as outside the proper sphere of medical practice. Physical methods are with us, and ignorance of them or refusal to employ them can only injure the medical profession.

LOW LIVING AND HIGH RENTS.

AT an inquest in Southwark on December 18th, 1908, Dr. F. J. Waldo, the coroner, contrived, by apt questions to the witnesses, to bring into strong relief the difficulties suffered by the poor in the matter of finding living accommodation at a reasonable price. The child on which the inquest was held died from tuberculosis, and was one of a family of seven persons—father, mother, and five children—occupying a small house of two rooms. This was furnished by the landlord after a fashion, but the whole family slept in one room. The average income of the family—the father being often out of work—was 14s. 6d. a week, and out of this small sum no less than 9s. 4d., or far more than 50 per cent., went in rent. High as is the sum, it appears, nevertheless, to be a smaller rent per room than is frequently paid for corresponding accommodation in the same locality. One reason why the rents of such houses and rooms are so very high as compared with the means of those who occupy them is that they are often farmed by some small capitalist in the neighbourhood. Buildings for the working classes, such as are commonly erected, either through private enterprise or by municipal authorities, are intended only for persons in possession of furniture, and no attempt, so far as we are aware, has been made to cater for those who have no capital wherewith to furnish a home. Houses and rooms of the character described at this inquest presumably come under the tenement by-laws of the borough council, and Dr. Dennis McCarthy, who in the course of his evidence in the case gave some striking evidence as to the evils of subletting, said that the house in which the deceased lived was fairly clean, but there would appear to be no special machinery for supervision, and it is not clear that the by-laws are so constructed as to prevent overcrowding within them. Clearly the public health cannot reach a desirable standard so long as there is such an immense disproportion between rent and income in the case of a large section of the less well-to-do working classes, for even the physical difficulty of supporting life on the small income which remains must be immense, and the moral atmosphere induced must be as eminently favourable to alcoholism as it is inimical to cleanliness and sound living of every kind. So long as any considerable portion of the population continues to live in such conditions there must be plenty of scope for the energies of the Mansion House Council on the Dwellings of the Poor, to which attention was recently drawn in these columns.

"ARTIFICIAL LANGUAGES."

WE have received a letter from Dr. Sydney Whitaker, of Waterloo, Liverpool, Vice-President of the T.E.K.A., an association of Esperantists, of which an account was given in the BRITISH MEDICAL JOURNAL of December 5th, 1908, p. 1687. Dr. Whitaker charges us with making "misleading statements" about Esperanto. One of these would appear to be that Esperanto is not a living language. We are assured that it has been a living tongue for several years, "spoken whenever and wherever Esperantists meet." If this criterion be accepted, it might be argued, with much greater force, that "Yiddish," "thieves' Greek," and the many varieties of *argot* in different countries, are living tongues. Dr. Whitaker informs us that there is no "natural language." The BRITISH MEDICAL JOURNAL is scarcely the place for a discussion on the origin of language, a problem as to which the French Institute many years ago had to decline to receive communications. But surely there is a difference between a language learnt at one's mother's knee, spoken by a whole people whose legends, poetry, achievements and aspirations are written in it, and an artefact product formed in a way that suggests that its begetter had, as Armado's page says in *Love's Labour's Lost*, "been at a "great feast of languages and stolen the scraps." Even if we allow Esperanto to be "living," in the same sense as the man made by Frankenstein was living, the question remains, Will it live? If we may say so, with all respect, we should judge that Dr. Whitaker has not given much attention to the study of the history of languages, or he would not be so perplexed as he appears to be by our statement that if Esperanto is to live it must, as it is spoken by people of different nationalities, suffer changes which will in the course of time make them unable to understand each other. Dr. Whitaker finds our statement that nationality modifies language neither grammatical nor lucid. On the point of grammar he must excuse us if we do not accept him as an authority. As regards lucidity, will he contend that an acquired language is quite the same thing in the mouths of men of different nations? This very day we overheard an educated Englishman ask a Swiss waiter the extraordinary question how "maudeegraw" came by its name. The foreigner was completely nonplussed, till philanthropy led us to whisper to him that the interpretation of the mysterious word was "Mardi gras." Do Italians, Frenchmen, and Germans all speak English with the same accent or with the same turn of phrase? If even the English-speaking peoples differ in their use of a common language which they have learnt in the natural way, it is surely not a dark saying that different races speaking an artificial jargon will impress upon it something of their own linguistic character. We may remind Dr. Whitaker of the Prioress, of whom Chaucer says:

> And Frenssh she spak ful faire and fetishly
> After the scole of Stratford-atté-Bowe,
> For Frenssh of Parys was to hire unknowe.

We venture to foretell that in a few years the Esperanto of Paris will be almost as unknown to Dr. Whitaker. This prediction is not made at random, for a French writer, M. Remy de Gourmont, not long ago related the experience of a foreigner who went to Paris fondly thinking that Esperanto would smooth away all difficulties of language. He found that no one understood him. This victim of misplaced confidence, speaking perhaps in his wrath, describes Esperanto as a mosaic of vocables taken from various European tongues, but carefully deformed by the removal either of the first syllable or the last. The result is often misunderstanding of a deplorable kind. Now, he says that he knows a little French, and wishes

to know what mental aberration has led Esperantists to use *viol* (rape) to denote a violet. We have not space for his account of his misadventures with Esperanto, but we may quote his conclusion. Having left home, he says, with a large stock of Esperanto, he will return with a little knowledge of French. This he considers an immense gain. French has given him the key to a new world. We congratulate him, for Esperanto scarcely serves to give him the key to a room in a hotel. That is the whole case in a nutshell.

SPIRITUAL HEALING BEFORE THE FRENCH LAW.

THE French Supreme Court of Appeal decided eight years ago that persons not possessing a regular medical diploma who professed to cure disease by "magnetic passes" came under the provisions of the Law of November 30th, 1892, against unqualified practice. This decision was understood to apply to all forms of treatment by what may be called non-medical methods. A recent decision of the Chambre Criminelle of the Court of Appeal would seem, however, to imply that this is not the case. An appeal was lodged against a judgement acquitting a youth who, as may be gathered from the text of the decision which is published in the *Semaine Médicale*, practised what would in this country be called spiritual healing. The decision sets forth that it appears from the evidence in the case that X., aged 16 years, when he received or visited sick persons who sought his aid for the relief or cure of their ailments, confined himself, invariably and whatever the nature of the disease, to placing one of his hands on the seat of pain, addressing a mental invocation to a spirit which he believed himself to have the power of moving to favourable intervention; that he had never in any circumstances ordered any remedy or medicament of any kind, given any prescription, or direction to the patients; that his acts had nothing in common with medical treatment, and were based wholly upon his belief in supernatural help without the employment of any therapeutic procedure; and that in these circumstances, which had been fully proved, the decision appealed against was right in view of the fact that X. had not committed the offence of illegal practice of medicine as defined in Article 16 of the Law of 1892, and forbidden by Article 18 of the same law. It follows that there was no violation of the law. On these grounds the appeal was rejected. The French are the most logical of people, and they are justly proud of their system of law in which everything is codified, and the provisions are laid out with the symmetry of a Dutch garden, in a manner so different from the chaos of cases and judgements and Acts of Parliament in which the dispensers of justice in this country have to grope their way. The case we have quoted, however, seems to show that even the French law is sometimes in contradiction with itself, unless it be held that "magnetic passes" are mere tricks, while the invocation of healing spirits is an appeal to something believed to be real. In that case all the magnetisers have to do to put themselves in order is to add incantations to their "passes." The problem is a knotty one, for according to the French law as expounded by our contemporary, either spiritual healing is a vain thing, and therefore comes within its provisions as a fraud, or it has some active effect, and then it comes under them as a form of quackery. This dilemma, however, is of too wide a compass to catch within its horns any but those who deny the possibility of any spiritual intervention in human affairs. An enactment interpreted in this rigid spirit would treat prayer to the Deity for a person afflicted with a disease as a violation of the law against the illegal practice of medicine. This would be absurd, for it would penalize prayer for the sick and punish a person for believing in a spiritual power.

PUBLIC OR PRIVATE PHILANTHROPY.

WHILE philanthropic institutions abound on every hand and workers are always forthcoming to serve on committees, the study of the wide subject of philanthropy in relation to the State is probably but little regarded in the desire to push forward the claims of each particular scheme to which its supporters have committed themselves. The late Mr. Kirkman Gray left behind him a series of papers which his widow, assisted by Miss B. L. Hutchins, have now issued in a volume[1] which is not only interesting as giving a clear account of the lines of thought that have slowly developed as experience has increased, but contains the carefully thought-out conclusions of a student of the subject. These conclusions are worthy of careful consideration by all who may be occupied in the same field of labour. In the first part of the book the transition in thought is traced by which private philanthropy has gradually passed, and is still pasing, into the hands of public bodies. The general thesis is laid down for discussion that widespread want resulting from broad and general causes cannot be adequately provided for by private philanthropy, and that it is the business of the community to assist its weaker constituents, and at the same time to control them. But there is no consistent doctrine to determine the relation of the State or community to the weaker classes of society, and for lack of it there has at all times been a wastage of power and a partial failure in result. The history of the advance of public recognition of public duties shows only too plainly that the stimulus of the agitator has been needed before effective action has been taken. The reform of the prison system, of the Poor Law, of sanitation, education, and a host of other movements for the improvement of the conditions of life for the poorer classes, were all started and stimulated by the action of agitators, such as Mrs. Fry, Mr. Chadwick, and many others, the support of the general philanthropist following afterwards, and leading by slow degrees to official action and control. The second part of the book is devoted to the discussion of the means by which the intervention of the State can best bring about the necessary control, and to what extent it can best be left to co-operate with private philanthropy. Among many questions thus considered there is probably none that commands more serious thought than that relating to the prevention of crime by juvenile offenders. It will doubtless surprise the reader to learn that the proportion of criminals convicted in this country between the ages of 12 and 16 stands at a higher figure than for the age-period from 21 to 30. The Prisoners' Aid Society does much to reclaim, but further co-operation between private workers and public officials is needed to cope with the circumstances which lead to such an appalling amount of juvenile depravity. In relation to the hospital system as at present prevailing, the gradual multiplication of institutions both for treatment and for isolation which are under public official control appears already to have reached the proportion of two-thirds of the whole number of public hospitals, and only one-third still remain under the control of committees responsible only to their own subscribers. This part of the subject does not appear to have been very fully con-

[1] *Philanthropy and the State, or Social Politics.* By Kirkman B. Gray. Edited by Eleanor Kirkman Gray and B. L. Hutchins. London: P. S. King and Son. 1908. (Demy 8vo, pp. 350. 7s. 6d.)

sidered by the writer, and may be regarded, with some other papers contained in the volume, as a fragment only, the completion of which was prevented by his early death. It is, however, well worthy of careful study as indicating some of the lines which future developments are likely to follow.

RESEARCH DEFENCE SOCIETY.

THE letter from Mr. Stephen Paget, which is published at p. 304, shows the progress made by the Research Defence Society within a year of its foundation. Beginning this time last year with 7 members, it has now more than 2,000, of whom 230 are ladies. A branch has just been formed at Dublin; 700 persons were present at the inaugural meeting. The branch has already 400 members. Branches have also been formed at York and Birmingham, and others are in course of formation at Bournemouth, Brighton, Cambridge, Edinburgh, Hull, Leeds, Liverpool, Manchester, Norwich, Oxford, Shrewsbury, and Torquay. The method in which the society conducts its campaign is fully described by Mr. Paget; his letter will, we hope, be read by every one under whose eyes the JOURNAL comes. We feel strongly that his disinterested efforts in a cause the advocacy of which necessarily entails upon him a good deal of unpleasantness from those opposed to vivisection entitle him to the gratitude of all who have at heart the advancement of the art of healing. We congratulate him and his fellow workers on what they have already done for the diffusion of a knowledge of the truth about the methods of biological experiment and the confutation of calumnies, and we heartily wish them increasing success in their most useful and truly philanthropic undertaking.

INTESTINAL PSEUDO-PARASITES.

DR. MALCOLM ALLEN ROYAL[1] has made a study of the mistakes which may arise in microscopic examinations of the faeces through confusing various kinds of vegetable material with animal parasites. Banana fibres are sometimes mistaken for tapeworms, and two cases of this nature have been cleared up in the author's laboratory. One was a child, aged 2 years, who was said to become more or less restless just before passing these spurious worms; the other was a man, aged 38, suffering from anaemia of obscure origin; his stools had been examined and material resembling tapeworms had been occasionally found. Upon further correspondence with the attending physicians, the connexion of these appearances with the ingestion of bananas became fairly well established. Many cases are on record where the cells of oranges or lemons have been mistaken for trematodes. Dr. Royal records the case of a man of middle age, apparently in good health, who noticed on several occasions a peculiar appearance in his faeces, and brought specimens to his doctor, who examined them microscopically. The doctor was puzzled at first as to their nature, but on questioning the patient found that these supposed worms occurred in the faeces only after eating oranges, and that oranges disagreed with him. The doctor's suspicion that the material in question really consisted of orange cells was confirmed by appeal to a botanist. Celery fibres may be mistaken for *Ascaris mystax*, *Oxyuris vermicularis*, *Uncinaria americana*, *Trichocephalus trichiurus*, or *Dipylidium caninum*. On several occasions Dr. Royal has found these fibres in specimens of children's faeces which have been brought to him on the supposition that the excreta contained parasitic worms. The vegetable character of the material was at once proved on testing it for cellulose, and inquiry elicited the fact that the passage of the faeces had been preceded by an attack of indigestion due to eating celery. Fragments of onion, according to the author, may be mistaken for *Ascaris lumbricoides*, *Anchylostomum duodenale*, or *Ascaris mystax*. Sauerkraut, he finds, might be mistaken for the undeveloped *Ascaris lumbricoides*, *Ascaris mystax*, or *Uncinaria americana*. Portions of dates, oatmeal, thread, rhubarb, and pineapple are also liable to lead to an erroneous diagnosis of various parasitic worms. An interesting feature of Dr. Royal's work is that in the case of all the above-mentioned vegetable materials he has demonstrated the resemblance to animal parasites by experiment upon himself. "As experimental work, "I ingested large quantities of the different fruits and "vegetables, making the diet for the day consist "principally of one article. At various intervals "following the ingestion of the different substances, "examinations of the stools were made, and especi- "ally after the end of twenty-four hours, this being "the time generally required for the food to pass the "length of the intestinal tract." As a standard for comparison with the material found in the faeces, teased fragments of the various vegetables, after maceration in 5 per cent. potassium hydrate, were used. Dr. Royal supplements his article with an interesting set of drawings showing the resemblances between the true and the pseudo-parasites.

[1] *Bulletin of the State University of Iowa.* New Series. No. 182. 1908

A RADIUM INSTITUTE.

THE announcement which appeared in the newspapers on Thursday as to the foundation of a Radium Institute was incorrect in several particulars. There is no question of a Royal Charter being granted. The institute will bear the name of "The Radium Institute." The King has taken the keenest personal interest in the foundation of such an institute, and it is through his instrumentality, aided by the liberality of Sir Ernest Cassel and Lord Iveagh, that the scheme is now about to be carried into effect. A committee has been formed, of which the chairman is Sir Frederick Treves, Bart., G.C.V.O., C.B. The members will include one named by Sir Ernest Cassel, one named by Lord Iveagh, Sir William Ramsay, K.C.B., the Hon. R. J. Strutt, Professor Sir J. J. Thomson of Cambridge, Sir Lauder Brunton, Bart., and Sir Malcolm Morris, K.C.V.O. We understand that a site has been secured, but it is not expected that the institute will be ready for work for some months. The institute will have no connexion with the Imperial Cancer Research Fund.

THE King has been pleased to appoint Mr. George Andreas Berry, M.B., C.M.Edin., F.R.C.S.Edin., to be Honorary Surgeon Oculist to His Majesty in Scotland, in the room of the late Dr. Argyll Robertson.

ON the occasion of the publication on January 1st of the first number of the twenty-fifth volume of the *International Centralblatt für Laryngologie, Rhinologie, und Otologie*, Sir Felix Semon, its founder and editor, received from laryngologists all over the world most gratifying expressions of their appreciation of the great services rendered to the study of the speciality by the foundation of that periodical and by the manner in which it has been conducted.

England and Wales.

[From our Special Correspondents.]

MANCHESTER AND DISTRICT.

Hospitals and the Education Authorities.

After a full discussion, the joint committee of the Manchester and Salford Divisions has declared itself strongly opposed to any arrangement by which public hospitals would undertake to treat school children in return for a subsidy from the education authorities. The committee entirely disagreed with the system which is now being tried in Sheffield. In that city the education authorities have entered into an arrangement by which, in return for every guinea subscribed by the authority to a hospital, six recommendation letters shall be received, which the authority can distribute to children needing treatment whose parents are unable to pay ordinary fees. The joint committee considers that even if a guarantee be given that full inquiry will be made as to the circumstances of the parents, and that only those who are unable to pay will be sent to the hospitals, the objections against public authorities dumping their patients into charitable institutions still remain. It is unfair to the subscribers, and beyond a doubt will very soon lessen the amount of charitable donations to hospitals; in fact, it would be just as reasonable if workhouse hospitals were to ask for public donations. It is equally unfair to the honorary staffs of the hospitals, who, in many cases, have already more work than they can well do, and it would only be mere justice that those who do the work the State requires should receive the pay. In its last annual report, the Medico-Political Committee, in reply to a request for advice from the Ulster Branch of the British Medical Association on the matter of treatment in hospitals having honorary staffs, recommended that the services of the medical profession should not be given gratuitously to patients who are maintained by public funds. The Annual Representative Meeting was entirely in agreement with this and passed a special resolution to this effect. The question is sure to be raised in Manchester before long, for already some of the hospitals are finding that their resources are being taxed by the large number of school children crowding to them, whose parents have been urged by the authorities to provide medical or surgical treatment; some of the hospitals are in such a critical financial condition that it would probably need some firmness on the part of the medical staffs to resist a scheme like that of Sheffield.

The Royal Infirmary and Medical Women.

Last week the Board of Management of the Royal Infirmary received a deputation from the Federation of University Women in Manchester and the Association of Manchester Medical Women, together with a representative of the medical women students in Manchester. The deputation presented resolutions from the societies mentioned urging the claims of medical women as candidates for resident appointments at the new infirmary. The Chairman of the Board assured the deputations that the board was in full sympathy with their request. The medical board also favoured the idea of throwing open to women the resident posts at the infirmary, and had twice recommended the board to do so. He regretted, however, that, owing to lack of accommodation in the new building, it was at present impossible for the board to consider applications from women candidates for resident posts. It was a pity that the application had not been made five years ago, when the plans for the new building were under consideration. In a letter to the *Manchester Guardian* the deputation replies that such a request would have been unreasonable at that time considering the limited accommodation in the old building, and it never doubted that the building of the new infirmary would solve the problem of accommodation. The letter continues: "It is unthinkable that the board which has carried out this great scheme could not with the help of the able superintendent reorganize the present accommodation in such a way that quarters may be found if necessary for a woman resident," and the fear is expressed that exclusion from the resident infirmary posts in Manchester may drive the most promising women students elsewhere.

Infirmary Arrangements.

Arrangements have now been made for the treatment of accidents and casualties at the central branch of the infirmary which is still kept at the old buildings in Piccadilly, and which will be worked in conjunction with the new infirmary. The casualty and accident department at the new infirmary is, of course, open day and night, but the central branch in Piccadilly is for the present only to be open from 9 a.m. to 6.30 p.m. every week-day for minor accidents and emergencies, and an adequate staff of doctors and nurses will be kept there during these hours. It has also been arranged that out-patients who reside at such a distance from the new infirmary as to make it difficult for them to attend there, may be seen at the Piccadilly branch at 9 a.m. All the arrangements are of a provisional nature and may be modified from time to time as occasion requires.

LIVERPOOL.

Suggested Municipal Action for Dealing with Tuberculosis.

Councillor A. Shelmerdine, who has devoted many years to problems of public health and especially to the question of tuberculosis, has presented to the health committee his report as delegate of the committee to the International Congress of Tuberculosis at Washington. He recommends: (1) The establishment of a municipal dispensary, or arrangements with the existing dispensaries, in the poorer quarters of the city, where those persons afflicted with tuberculosis might attend at stated periods to be examined, receive advice and, if necessary, treatment. (2) The provision by the municipality of beds in an open-air hospital or sanatorium for the treatment of early cases of the disease. At present, he says, a man with consumption has no opportunity for treatment unless he has means at his disposal, and his only alternative is to find refuge in the Poor-law infirmaries. (3) The provision of an institution for the isolation of those advanced dangerous cases which could not be properly isolated and treated at home. The advanced case of consumption was the most dangerous form of the disease to the community, as it was principally through such cases that the healthy members of the family were infected. (4) As far as possible, healthy children should be isolated from those suffering from tuberculosis, as they were most susceptible to attack. (5) The provision of a pure milk supply was of the highest importance, and until tuberculosis could be eradicated from dairy cows the number of sterilized milk dépôts should be increased, as there was no doubt that they had already saved thousands of infant lives. The measures at present in operation in Liverpool were, as far as they went, as perfect as possible for the suppression of tuberculosis, but they were insufficient when it was considered that there were 8,000 or 9,000 people in the city suffering from the disease, and that over 2,000 lives are annually lost in Liverpool by its ravages. Something of a more far-reaching nature should be attempted by an important municipality like that of Liverpool. Dr. H. H. Clarke, chairman of the Medical Board of the Hospital for Consumption and Diseases of the Chest, has written to the press pointing out that Mr. Shelmerdine has not recognized the fact that what he now recommends has for the most part been carried out in practice for many years by that hospital, which has a branch sanatorium with 40 beds in Delamere Forest, has 30 beds in the hospital in Mount Pleasant, has a large out-patient dispensary and a laboratory; it has further co-operated with the health committee on the lines which Mr. Shelmerdine recommends, and has an arrangement with the Victoria Nursing Association for visiting patients in their own homes.

The Poor-law Sanatorium at Heswall.

The annual report of West Derby and Toxteth Park Joint Hospital at Heswall, drawn up by the Clerk to the Committee (Mr. H. P. Cleaver), has just been issued. From this it appears that the weekly cost per head was: In maintenance, 14s. 6½d.; building repairs, furniture, etc., 10s. 0¾d.; and other charges, £1 1s. 8¾d. With regard to the cost and the results obtained, Mr. Cleaver draws attention to the following points:

Cost of Maintenance.—With regard to this apparently large item, it should be remembered that sanatorium patients cannot be treated without very good and plentiful food; also the quantity of clothing required is in excess of an ordinary hospital. Further, in necessitous cases, flannel underclothing is given to patients on their discharge. The greatest handicap under this heading is the small number of beds, as it has been proved beyond any doubt that it is always more expensive (proportionately) to keep up a small establishment than a large one. Again, the fact must not be lost sight of that a proportion of the patients treated in the hospital have ceased to be a burden upon the rates through recovery, whereas probably all of them would still have been in and out of hospital had the sanatorium not existed.

Result of Treatment.—The lay mind is so expectant as to look for a "cure" in every case treated, whereas in many cases it is a subject for satisfaction when the disease is "arrested" or "quiescent," so as to enable the patient to follow some employment. It is difficult to keep in touch with every patient after leaving, but some old patients had visited the hospital who owed their present good health to their treatment, and who would willingly present themselves to the committee should they wish it. They are all working, and some have been discharged for a considerable length of time. Nine former patients visited the matron at Christmas, and all were in good condition (with one exception) and earning their own living. Another point that should be emphasized is that 75 per cent. of the cases treated last year were discharged free from the tubercle bacillus, so that they have ceased to be dangerous to the general public. The standard of classification of patients on discharge is a very high one, the patient being entered as "disease arrested" if there seemed to be the slightest doubt of his relapsing in even a small degree. Without prejudice, and for a fact, I know that the officials at the hospital are more cautious in this way than is the general rule. This makes a fresh difference in the appearance of the statistics. Boards of guardians all over this country are beginning to realize the fact that the West Derby, Liverpool, and Toxteth guardians, in being the pioneers in this movement, have taken a most essential step towards the public welfare, and one which will soon become universal. I believe that the Bradford guardians, the second in the field, are now enlarging their sanatorium.

BIRMINGHAM.

Playing Fields for Birmingham.

Under the auspices of the Birmingham and District Housing Reform and Open Spaces Association, a public meeting was held at the Council House recently to consider a scheme for acquiring 250 acres of land from the Birmingham, Tame, and Rea District Drainage Board at Castle Bromwich for the purpose of providing suitable playing fields. It was estimated that the land would be self-supporting, as it would be utilized by the numerous cricket and football clubs in the neighbourhood. A resolution to support the association in acquiring the land was carried unanimously.

Medical Inspection of School Children.

The Medical Officer of Health for West Bromwich has just issued his first annual report on the medical examination of the children attending the elementary schools in the borough. Dr. H. Manley is not only the medical officer of health but also the school medical officer, and he has examined upwards of 3,300 children since his appointment in March, 1908. He has adopted a system with regard to the examinations by which it will be possible to trace every child from its birth to the end of its school life, and to establish a set of complete statistics of considerable local value. He divides the parents of children attending elementary schools into four distinct classes:

1. Those who really take an interest in their children, and who could, if they chose, send their children to private schools, but are fully sensible of the excellent teaching provided by the State.
2. Parents who are equally interested in their children, but have not the pecuniary means to carry out all that they would wish.
3. Parents who are in the position of Class I, but who are quite indifferent as to the cleanliness or welfare of the child.
4. The idle, dissolute class, where the home is dirty, the parents often drunken, and where the child reflects in clothing, in boots, in vermin, and in health the home environment.

The boys, of whom only one-third had reached the sixth standard, averaged 54.8 in. in height and 73.6 lb. in weight. The girls averaged in height rather more, being 55.7 in., and in weight 72.8 lb. In the matter of boots and clothing, while both sexes were gravely in need of boots, the boys especially, there were 42 boys and 12 girls insufficiently clad. Dr. Manley comments severely on the verminous condition of the girls. Inquiry was made as to the care of the teeth, and in most cases it was found that a toothbrush was never used, yet the condition of the teeth was much better than might have been expected. The condition of the eyes and eyesight was only tested by the master or mistress in many schools, but sooner or later a specialist must be appointed. A certain number of children were found to be backward and defective, and required more detailed and personal attention than could be given in the present condition of an ordinary school. For such children it might be possible some day to provide special schools. The chief factors which singly or in combination were found to be the cause of retardation in school progress were:

1. Mental defects, generally hereditary, but in some rare cases the result of illness or shock. This class should as far as possible be sent to special schools.
2. Physical defects.
3. Frequent and prolonged illnesses which have prevented the child from regular attendance at school.
4. Constant migration from town to town, or even from school to school.
5. Bad environment, including bad homes, drunken parents, criminal surroundings, neglect, and indifference.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

University of Edinburgh—History of Medicine.

The second of the course of eight lectures on Medicine among the Ancient Egyptians, Greeks, and Romans was given by Dr. John D. Comrie on Wednesday, January 20th. The lecture consisted mainly of a consideration of the Ebers and Berlin medical papyri, followed by a demonstration of lantern slides illustrative of Egyptian life, Egyptian pathology, and Egyptian surgery.

Royal Infirmary, Glasgow.

The annual meeting of the contributors was this year of special importance. The annual report submitted showed that, despite the reconstruction, the work of the hospital had not been impeded or materially diminished. While the average number of resident patients was 591, against 593 in the previous year, the outdoor department treated over 5,000 more patients than in 1907. The average cost of each bed, fully occupied, was somewhat higher than in the previous year—£70 9s. 11d., against £69 5s. 6½d. in 1907. The honorary treasurer's report showed that the total ordinary revenue was £30,308, while the total ordinary expenditure was £42,969, leaving a deficiency of £12,661, but the extraordinary revenue, £43,954, was very high, so that, after meeting the deficit of the ordinary income, the sum of £31,293 was carried to the credit of the stock account—the largest amount on record. The reconstruction had made great progress during 1908, and it was expected that the laundry power house, extension of nurses' home, and admission building would be ready for occupation in the spring, and that the north or surgical block would be ready for patients before the autumn. Immediately on completion of the north block the managers proposed to proceed with the erection of other portions of the new building. The present building scheme had nearly exhausted the special fund of £128,000 collected in 1904. The first (1897) fund was earmarked for reconstructing the front or medical block. As the present time was not very suitable for collecting more money, the managers asked the Court of Contributors for authority to transfer £150,000 from the Accumulated Stock Fund and use it for building purposes. The report alluded to the agreement come to by the boards of the infirmary and St. Mungo's College as to the best means of securing the continuance of clinical teaching in the Royal Infirmary and the subsequent conferences which took place between representatives of these boards and the University Court.

The Lord Provost moved the adoption of the report; the motion was seconded by Principal Sir Donald MacAlister,

who stated that in his opinion the proposals made at the conferences with the University Court were eminently reasonable and practicable, though details were still under consideration. He had no hesitation in anticipating that a satisfactory arrangement would be carried out; in that case better accommodation for teaching women students would be made and the opportunities for all other medical students would be so amplified that Glasgow as a clinical centre would compare well with any other.

In moving a special resolution to authorize the transfer of £150,000 to the building account, Mr. J. D. Hedderwick said that, though the formal notice of the motion had been very short, still the subject had been mentioned in every annual report since 1896. The citizens had responded handsomely to the appeals made in 1897 and 1904. On the first occasion they were asked to subscribe to the reconstruction of the front block as a memorial of Queen Victoria's Diamond Jubilee. Of the £100,000 asked, £80,000 had been obtained, which, with interest, was now £98,000. It was earmarked for this special purpose. The appeal in 1904 produced £128,000, which was raised by interest to £138,000, but this sum had now almost all been paid away. The total cost of reconstruction was estimated at £500,000. The stock account amounted to £295,976; if the transfer of £150,000 was authorized, this, with the money collected, would make £386,000 of the total £500,000 required. The motion was seconded by Mr. J. Glen, and evidently met with the full approval of those present, as an amendment moved by Dr. Charles Workman that the matter be referred back to the managers for further consideration was not seconded.

Jubilee Institute for Nurses.

The report of the Council of the Scottish Branch of Queen Victoria's Jubilee Institute for Nurses for last year showed that there are now 308 nurses on the roll. An average of eleven new posts yearly had been created in the last six years. The Council had acquired and furnished an adjoining flat, and arranged that two more Queen's nurses should be trained every half-year. This flat had been purchased out of the funds bequeathed to the institute by the late honorary secretary, Miss Guthrie Wright. To provide the additional income to cover present expenditure and to meet the training of the four extra nurses the public were appealed to. Thirty-five nurses had completed their course of six months' district training during the year. Two of them were given the special training necessary to qualify for the examination of the Central Midwives Board, which they had passed. During the year the Scottish Council was responsible for the maintenance of thirty-seven Queen's nurses and probationers. Thirty-two nurses whose training had been completed during the year had been permanently engaged by local committees. The number of affiliated branches in Scotland was now 199. A Queen's nurse from the home had given daily attendance at the special school for cripple and mentally deficient children. Sir Henry Littlejohn claimed that the institute should rank along with the municipal and other public bodies as a large contributing factor in the reduction of the death-rate; he contrasted the state of things prevailing in the homes of the poor before the introduction of Queen's nurses with that of the present day, and spoke in the highest terms of the quiet, unobtrusive work of the nurses in their attendance on both acute and chronic disease.

Selkirk Medical Officership.

The Town Council of Selkirk has had considerable difficulty in finding a successor to Dr. John Muir, who resigned the medical officership of the burgh some time ago. The position was offered to Dr. Somerville, the medical officer of health for Galashiels, but he did not see his way to accept it. At a recent meeting of the council it was suggested that the vacant appointment should be advertised, but at a salary considerably higher than that paid to Dr. Muir. Another proposal was that Dr. Oliver Newton, medical officer for Roxburghshire, should be appointed, with Dr. Muir as assistant. Neither plan was approved. In order to get out of the difficulty, the council has now decided to ask Dr. Muir to continue in office, and it has been agreed to offer him a considerable increase in the salary.

Ireland.

[From our Special Correspondent.]

Ulster Medical Society.

On Thursday evening, January 21st, Mr. Kirk, the President of the Ulster Medical Society, entertained the Fellows and Members to a most enjoyable smoking concert in the Medical Institute, Belfast. About 120 were present. Mr. and Mrs. Kirk received the guests in the library, and subsequently the concert was held in the large hall of the institute. Several members and friends sang, and some short and witty speeches were enjoyed. Reference was made to the conferring of the honorary Fellowship of the society on Sir William Whitla, and Sir William suitably replied.

Special Correspondence.

MUNICH.

New Chief Medical Officer of Health.

An important change is about to take place in the post of the highest Bavarian medical officer. Geheimrat Grashey, Medicinalreferent im Ministerium des Innern, retires on February 1st, and will be succeeded by Professor Dieudonné. This appointment has been made in accordance with the special wish of the new Minister of the Interior, v. Brettreich, and it may be regarded as the commencement of a new era in the administration of medical affairs, and as foreshadowing hygienic reforms. Professor Dieudonné, until now an army medical officer, is well known as a hygienist, especially as a bacteriologist. From 1893 to 1898 he was attached to the Kaiserliche Gesundheitsamt in Berlin. In 1897 he was a member of the imperial commission under Koch for the investigation of the plague in India. From 1898 to 1904 he lectured at the University of Würzburg, being at the same time head of the military bacteriological investigation laboratory. Since 1904 he has held a similar position in Munich. His widest-known work is *Immunität, Schutzimpfung und Serumtherapie*, an admirable survey of modern progress in these subjects. Personally he is highly esteemed and liked, and is regarded by the medical profession as certain to be the right man in the right place.

Correspondence.

RESEARCH DEFENCE SOCIETY.

Sir,—Wednesday in this week (January 27th) is the first anniversary of the founding of the Research Defence Society. The committee, therefore, wish me to send you a short statement of the work of the past year.

The society will celebrate its birthday by the inaugural meeting of the Dublin Branch. This meeting will be held in the theatre of the Royal Dublin Society. More than 180 persons, beside members of the medical profession, have expressed their intention of joining the Dublin Branch Society. Among them are the Archbishop of Dublin, Lord Iveagh, Lord and Lady Pembroke, Lord Ashbourne, Lord Monck, the Bishop of Clogher, the Bishop of Tuam, the Deans of St. Patrick and of Christ Church, Dublin, the Provost and Vice-Provost of Trinity College, Dublin, and Sir Neville Lyttelton. By the inauguration of this branch, the Research Defence Society, which had but 7 members this time last year, will now have more than 2,000, of whom 230 are ladies.

The society has lost by death 10 members: Professor Ayrton, Sir John Banks, Mr. Harold Barnard, Dr. C. E. Beevor, Dr. J. G. Glover, Mr. Arthur Lister, Lord Poltimore, Mrs. Roget, the Earl of Rosse, and Sir Thomas Stevenson.

Since the last report, which I sent to you in May of last

year, the following have consented to be Vice-Presidents of the society:

Sir William Abney.	The Duchess of Montrose.
Mrs. Garrett Anderson.	Mr. Eden Phillpotts.
Sir Robert Ball.	Lady Priestley.
Lord Barrymore.	The Bishop of Rangoon.
Lady Bliss.	Mrs. Romanes.
Lady Buckley.	The Marchioness of Sligo.
Lady Burdon-Sanderson.	Lord Stalbridge.
The Dean of Chester.	Lady Stanley of Alderley.
Lady Cromer.	Lady Sutton.
Lady Foster.	Sir Reginald Talbot.
The Earl of Glasgow.	Mr. A. G. Vernon-Harcourt.
Sir Samuel Hoare.	Bishop Welldon.
Lord Lamington.	The Duke of Wellington.
Sir Frank Lascelles.	Mrs. Robert Peel Wetherhed.
Lord Malmesbury.	The Bishop of Winchester.
The Duke of Montrose.	

Rules for the society, and for the branch societies, have been approved by the Committee, and will be submitted in due course to a general meeting of the society.

Branch societies have already been formed, or are in course of formation, in Birmingham, Bournemouth, Brighton, Cambridge (University Branch), Dublin, Edinburgh, Hull, Leeds, Liverpool, Manchester, Norwich, Oxford, Shrewsbury, Torquay (Devon Branch), and York. Several of these branches have already more than one hundred members.

The progress of the society has been watched with great interest in America, by many well-known representatives of science and medicine; and steps have been taken for the defence of research in the United States.

The society has issued the following pamphlets:

1. Letter from the President, announcing the formation of the Society.
2. Report of the Inaugural Meeting.
3. Experiments on Animals during 1907 in Great Britain and Ireland.
4. Some Facts as to the Administration of the Act.
5. The Value of Antitoxin in the Treatment of Diphtheria.
6. Evidence of Sir Frederick Treves.
7. Yellow Fever and Malaria.
8. Have Experiments on Animals advanced Therapeutics?
9. The Extinction of Malta Fever.
10. Evidence of Lord Justice Fletcher Moulton before the Royal Commission, July, 1907.
11. The Work of the Research Defence Society.

A further series of pamphlets is in course of preparation, including:

1. The recent correspondence in the *Times*.
2. An account of the use of a serum treatment in cases of epidemic cerebro-spinal meningitis.
3. An account of the anaesthetics used in experiments on animals.
4. Answers to some statements commonly made by the opponents of all experiments on animals.
5. A reprint of Dr. Bashford's article on the Advance in the Knowledge of Cancer (*Nature*, December 31st, 1908).

A great many bound sets of the pamphlets already issued have been sent to the chief public free libraries in London and in other towns, and to many other libraries, institutes, and clubs. Very many have also been sent in answer to personal applications. These bound pamphlets may be procured through any bookseller.

Representatives of the Research Defence Society have spoken at a large number of meetings or debates in London or in other towns. On other occasions the society has sent literature for the use of speakers in debate. The society is always willing to send a representative to a debate arranged by any literary society, club, or debating society, or to any public meeting, with this exception, that it does not propose to accept "challenges" from the anti-vivisection societies or to arrange with them the terms of a debate.

A collection of lantern slides has been prepared, with a descriptive catalogue, for the use of anybody who wishes to give a lecture on some of the discoveries that have been made by the help of experiments on animals.—I am, etc.,

STEPHEN PAGET,
Honorary Secretary Research Defence Society.

70, Harley Street, W., Jan. 25th.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

SIR,—The suggestions which appeared in the JOURNAL of January 9th in the letter of Dr. Harvey Hilliard, advocating the existing Poor Law and its institutions as the method and means by which defective children in the elementary schools of the country should be dealt with, will not, I hope, be taken too seriously by the medical profession, and still less form the basis of any recommendation to the Education Department and county council authorities by the British Medical Association as a whole. The principle laid down by Dr. Hilliard in his letter is so thoroughly bad and out-of-date with modern thought and the times that I do not propose to follow him in detail to show how impracticable and impossible are his suggestions from a Poor-law point of view, but I assert that it would be easy for officials engaged in the practical administration of it—as apart from the knowledge which guardians possess, and who only know one side of the work—to show that, besides its impossibility, his scheme, if adopted, would not at any rate mean economy, but rather an enormous increase in national and local burdens.

It is useless for Dr. Hilliard and those who agree with him to argue upon supposed alterations expected by the promised report of the Poor Law Commission; that report is not yet before us, and, whatever its decisions might be, it would have to be followed by legislation, and could not be applied to this question. The reform of the Poor Law is needed, but it will still have to be Poor Law, of a more modern, humane, and discriminatory character; but it will not, and should not, be applicable in any way to the children of the nation now outside the Poor Law.

It is more than probable, and I think highly necessary, that any alteration in the Poor Law will be in the direction of divorcing the Poor-law children from their present care and giving to them the same chance in life that falls to the lot of other children more happily placed, and whom we rightly regard in common with our other children as the future assets of the nation. It is quite certain also that, assuming it were possible—and it is a very large assumption—to deal with all these defective cases through the agency of the Poor Law and its kindred institutions, the necessity of greatly increasing the staff and equipment of the various infirmaries would entail such enormous expenditure, out of all proportion to any benefits and results obtained, as to greatly exceed what Dr. Hilliard and we all agree in lamenting—namely, the present high taxation for Poor-law purposes.

We all know that under the present Poor-law system these "children of the State" cost the ratepayers on an average £30 *per annum* for maintenance purposes alone, not counting the thousands and thousands of pounds of ratepayers' money spent in capital construction and in establishment charges, and still less counting the extra cost of the defects from which they suffer, and yet Dr. Hilliard would have us believe that it would be more economical to draft our other defective children suffering from ringworm, ophthalmia, etc., into our Metropolitan Asylums Board schools and homes, and our adenoid and other children into our Poor-law infirmaries and Poor-law schools with their blighting and demoralizing influence upon the children, rather than to have these children treated in the school clinics with other neighbouring medical agencies, part and parcel of a continuity of educational work, in the atmosphere of their homes, friends and companions, and with the air of freedom, decision, and initiative, which alone can build up self-reliant and resourceful characters. If any one doubts the demoralizing effects of our Poor-law system upon "the children of the State," let them read the letter of Lord Lytton and Mrs. Barnett in the *Times* of January 8th, and also the recent report upon the educational work of the Poor Law in the certified schools of England and Wales by the Board of Education, which letter and report are unanimously condemnatory.

Dr. Hilliard will admit that whilst all this treatment for defects may be going on under his proposed Poor-law system, the children must be educated during the period of detention. It is shown by the clearest evidence that under Poor-law auspices these children are a year behind the standard of ordinary children, and that during the best time of their growing lives, when vital impressions are most easily received, as the report says:

> Rows and rows of fat, clean, well-shod infants sitting, bored and listless, listening with praiseworthy patience to deadly details about some plant or animal that they were never likely to see or hear of again; or reading in unison what they did not understand; or reading, again in unison, some simple primer for the third or fourth time.

This detention of defective children which Dr. Hilliard advocates under Poor-law conditions, in the familiar barrack school or infirmary, is one that I feel sure public lay and medical opinion in the mass will universally condemn quite irrespective of the cost, and it is obvious that under such a system the cost would be more.

There is need in this great matter for some of us to think Imperially, and it is a significant reflection, in view of Dr. Hilliard's letter, that the joint committee of the London County Council, composed as it was of lay educational experts with a very strong representative and authoritative medical committee, after taking evidence and going thoroughly into the matter, did not make any such suggestions for utilizing the Poor Law to carry out this great work.

Had they done so, I doubt very much whether public opinion would tolerate such a proposition; the stigma of pauperism which Dr. Hilliard so airily insinuates and discusses as applying to the working classes in their relations to our present system of hospital relief and Metropolitan Asylums Board services to the public, is a travesty of existing facts, but the scheme which he now proposes would indeed be a pauperism engrafted upon our educational system of free children, with all its degrading and stultifying social effects. The whole proposal is a retrograde and reactionary step in a great national movement, which should find at least the medical profession united in its action and opinion, and in the vanguard of this public health progress.

The recognition by the State of the necessity for inspection and treatment of defective children in our elementary schools has been brought about mainly by the past work and agitation of medical men and medical public opinion in our press, of which this JOURNAL has taken its full share over a series of many years, and now to suggest that this work—enormous in its extent and of a very special character—should be tacked on to an effete and discredited Poor-law system in the throes of transition, would reflect no less discredit upon our profession as citizens and thinkers than to our reputation and sincerity as doctors in the cause of physical deterioration and national prosperity, were it adopted by our Association.—I am, etc.,

MORGAN I. FINUCANE, L.R.C.P., M.R.C.S.,
Parish Doctor, late a Guardian and Manager of the Metropolitan Asylums Board.

London, S.W., Jan. 25th.

FLAGELLATION OF LYMPHOCYTES.

SIR,—Referring to the paper by Drs. H. C. Ross and C. J. Macalister in the JOURNAL of January 23rd, p. 206, I should like to point out that, in relation to a paper on the Etiology of Cancer read by me before the Liverpool Medical Institution in 1899, I exhibited specimens and illustrations of this phenomenon which I had noted in connexion with the cells forming the round-cell infiltration occurring in the proximity of minute secondary deposits in the interstitial spaces in sections from a case of cancer of the stomach. Large numbers of the round cells had lost their usual spherical shape, and appeared markedly spiked and irregular. From their surfaces projected fine prolongations, to the ends of which were attached minute oval or diamond-shaped, spore-like refractile bodies, which stained green with the methyl green of the Ehrlich-Biondi-Heidenhain stain. They also stained well with Ehrlich's acid haematoxylin. In fact they responded to stains as does chromatin, particles of which I concluded they were. They resembled miniature spermatozoa, but whether they were in any way connected with cell fertilization it was impossible to determine. Some flagellate bodies were found separate from the cells. Such a conjecture reminded me at the time of the theory, promulgated, I believe, by Klebs and mentioned by Ruffer and Walker[1] in their paper on the so-called parasites of cancer, that one of the functions of leucocytes might be the fertilization of cells throughout the body. Their appearance gave support to a conviction I have always had that, as cell comes from cell, so each must be fertilized to ensure reproduction. This I regard as a definite law, not proved, maybe, by actual demonstration of the phenomenon, but recognized by constant recurrence of effect.[2] At the time neither myself nor Professor Sherrington, to whom I showed the specimens, could offer any interpretation of the phenomenon, nor attribute to it any definite significance, as it was found in fixed tissues. It is very interesting to me to find that Drs. Ross and Macalister have noted a similar, or what may be even an identical, phenomenon in living cells.

I have also noticed and described at the Liverpool Medical Institution a somewhat similar appearance in specimens of blood from myeloid leukaemia, which were several times washed and centrifuged in sodium citrate in normal saline solution, then very carefully spread into films and stained with Leishman's stain. Peculiar alterations in contour, which I regarded and described as flagellation, had taken place. From the surface of the large neutrophile myelocytes, and also from the other varieties of mononuclear cells, fine prolongations extended in a form resembling flagella; they were thicker at their attachment to the cells than at their extremity. From some cells only one, from others several, flagellate prolongations were noted. When situated away from the nucleus they were seen to be formed of cytoplasm only. When derived from the cell in close proximity to the nucleus, fine strands of nuclear chromatin substance extended from the nucleus for a short distance into them. In cells containing ruby granules these were occasionally found at the base of these flagellate prolongations. These flagellate prolongations varied in length from one to several times the diameter of the cells. They were to be clearly distinguished from pseudopodia such as one sees in the actively amoeboid polymorphonuclear cells, and as they occurred in the absence of organisms they were not associated with active phagocytosis at the time.[3] In a perfect film of blood the lymphocytes show a dual architecture of the cytoplasm. (*a*) A basophile reticulum with honeycomb-like apertures. (*b*) Enclosed in this reticulum is a non-granular transparent gelatinous substance in close association with the archoplasm and like it taking on a faint pink with eosin. This material passes out in long, fine prolongations through the apertures of the basophile reticulum, giving to the cell a starred or radiate appearance. These flagellate prolongations must not be confused with the basophile fringes and buds. I should also like to mention that in perfectly fixed specimens of blood, embedded and cut into sections, centrosomes can easily be distinguished and examined in polymorphonuclear neutrophiles, eosinophile cells, and neutrophile myelocytes. I have failed to determine their presence in basophile cells, although there is little doubt that they exist.

The large myeloplaxes of the bone marrow also possess peculiar strands of cytoplasm extending from the surface, very similar to the dendrites of nerve cells. In developing bone they are sometimes so regularly arranged as to give the cell a ciliated or, when thicker than usual, a cogged-wheel appearance.

I shall be very pleased to show my drawings and specimens to Drs. Macalister and Ross if they should wish it.—I am, etc.,

ROBERT J. M. BUCHANAN, M.D., F.R.C.P.

Liverpool, Jan. 23rd.

[1] *Journ. Path. and Bact.*, 1892.
[2] *Liverpool Med. Chir. Journ.* February, 1900, p. 156.

LACTIC ACID FERMENTS FOR PRODUCTION OF SOUR MILK.

SIR,—With reference to your recent editorial on an examination of some commercial lactic ferments,[4] may I direct attention to certain points in connexion therewith which are very important and often overlooked?

1. The time of incubation (six to ten hours) laid down by some manufacturers is much too short. As your own results show, in the case of solid tablets there is little acid production in ten hours. At least twenty-four hours are necessary to produce an adequately soured milk, and to ensure that the lactic acid organisms are predominant.

2. The organisms are often no longer living in solid tablets. This is serious, as in such cases, though in twenty-four hours or less a curd is often formed, the curd is a rennet curd produced by "lab-forming" organisms not killed by the boiling of the milk, and growing vigorously at such a suitable temperature, in a suitable nidus, and without competition. The result of consuming such a product (which may not be unpalatable) must be

[3] Exhibited by aid of $\frac{1}{12}$ in. oil immersion No. 18 eyepiece, Zeiss.
[4] BRITISH MEDICAL JOURNAL, January 9th, p. 104

highly deleterious and rather enhance the unfavourable bacterial condition of the alimentary canal which the treatment is designed to cure. It is always advisable to test the curd produced with litmus paper in order to ascertain that it is strongly acid and not alkaline.

3. It is necessary to lay stress on the fact that, though all preparations on the market are said to produce "Bulgarian yaghourt," the greater number of them do not contain the organisms isolated from that substance. The principal ferment of this sour milk is peculiar in its properties, acid-producing power, and resistance, and in these particulars is greatly superior to any of the ordinary lactic organisms known to us, and is more adapted to growth in the alimentary canal. These facts, so strongly urged by Metchnikoff, have been largely obscured on account of the greater difficulty found in producing milk soured by the right organism, and because the milk so soured is not quite so palatable as that produced by ordinary lactic acid organisms. It is well to consider whether these objections should be allowed to weigh against the greater value in therapeutic efficiency.

4. The recent work of Crithari, in Metchnikoff's laboratory, explains the reason of failures experienced in the administration of *tablets*. He has shown that for the full activity of the Bulgarian bacillus an *acid* environment is necessary. This is easily obtained by the administration of milk soured by the organism, and care must be taken that the milk is really sour and curdled, as otherwise there is no guarantee that the organisms have grown.—I am, etc.,

King's College, London, Jan. 23rd. R. TANNER HEWLETT.

THE TREATMENT OF SYPHILIS.

SIR,—In his letter of January 9th, p. 123, Colonel Lambkin raises several interesting points.

1. Calomel injections are transitory in their action; therefore they are better suited for an interlude during continuous treatment, their effects are more rapid and transitory than metallic mercury, so that treatment by the mouth can be sooner resumed.

2. The preparation used by Mr. E. Lane is less painful than that used by Colonel Lambkin, so that calomel injections are continued for a longer period. Colonel Lambkin never gives more than eight injections of calomel or metallic mercury, more often six, whereas Mr. E. Lane gives fifteen to sixteen. Colonel Lambkin, after six to eight injections, allows a two months' rest. This would seem to be necessary with the preparation he uses, for, as far as my experience goes, the use of a combination of creosote and camphor is not only unnecessary, but a distinct disadvantage; the injection used by Mr. E. Lane is unattended by pain.

The formulae suggested by Colonel Lambkin seem capable of various modifications from time to time; thus, in 1903 the use of a basis of anhydrous lanolin and paroleine, containing 2 per cent. of carbolic acid, was suggested. In 1907 a basis of palmitine, with a mixture of creosote and camphoric acid, was proposed, whilst now the mixture of creosote and camphoric acid is altered to a combination of creosote and camphor. This would seem to be eminently more suitable, as camphoric acid is not soluble in an equal part of creosote.—I am, etc.,

London, W., Jan. 18th. T. P. BEDDOES.

THE MECHANISM OF THE ASTHMATIC DYSPNOEA.

SIR,—An essential part of Dr. Auld's interesting lecture on asthma, published in the JOURNAL, December 26th, 1908, p. 1850, is a distinct challenge to those who hold that the obstruction in the bronchioles depends on vascular distension, not on bronchial constriction.

Dr. Auld contends that adrenalin given hypodermically relieves the asthmatic dyspnoea by inhibiting the respiratory centre, not by constricting the bronchial vessels. How, then, would he explain the equally rapid relief afforded by inhalation of adrenalin spray? So given the drug acts only locally; neither the respiratory nor any other centre could be affected.

It is unsafe to argue that because it is thin and relatively non-vascular, the bronchial mucosa cannot become turgid at all. It cannot, of course, swell to the extent possible in the nasal mucosa.

Dr. Auld refers to the relatively moderate dyspnoea which characterizes generalized acute capillary bronchitis, and challenges anyone to affirm that the alleged hyperaemia of the bronchial mucosa "could suddenly cause a much greater obstruction of the air tubes than is produced by acute inflammation." There should be no hesitation in accepting this challenge. There are two separable vascular factors in the distension of the bronchial mucosa in asthma:—(1) Vaso-dilatation of the bronchial (not the pulmonary) area; and (2) vaso-constriction of the cutaneous, and possibly other, areas. The latter is at least as important as the former. Hence we may relieve asthma either by constricting the bronchial area (as by adrenalin), or by dilating the cutaneous area (as by the nitrites or general hot baths of any kind). Even more efficient is it to operate on both factors simultaneously as follows—place the patient in a vapour bath from which the face is excluded, and cause him at the same time to breathe cold air through an inhaler containing broken ice.

The reason why the obstructive dyspnoea in generalized acute capillary bronchitis never approaches in intensity to that of a severe asthmatic paroxysm should now be obvious. In acute bronchitis, as in practically all febrile affections, the factor of peripheral vaso-constriction is entirely lacking. Not only is there no added vaso-constriction as in asthma, but even the normal vascular tone is in great part inhibited; as Broadbent has pointed out,[1] "pyrexia as such gives rise to . . . great relaxation of the peripheral vessels." Pyrexia, indeed, acts on the vascular system like the nitrites. Hence an attack of almost any fever, even bronchitis, *if sufficiently acute*, usually frees the asthmatic from his complaint for the time. There are several classical illustrations. Trousseau noted that throughout an attack of bronchopneumonia a habitual asthmatic slept flat on his back,[2] and Watson relates two cases in which severe asthma was replaced entirely and permanently by acute phthisis.[3]

The most notable, though not the only, exception to the rule that pyrexia implies relaxation of the vascular periphery is malaria. This is of special interest in this connexion, because it is well known in malarial districts that an attack of ague may take the form of an asthmatic paroxysm (Norman Chevers[4]).—I am, etc.,

London, S.E., Jan. 15th. FRANCIS HARE.

THE HOME TREATMENT OF SCARLET FEVER.

SIR,—Dr. Robert Milne, in his paper on the above subject, shows evidence of much genuine faith in his own conclusions, though the data upon which he bases them must be far from convincing to any one who has studied infectious diseases, and scarlet fever in particular, at all carefully.

His main theory appears to be that the infectious agent in scarlet fever is located principally, if not entirely, in the desquamating cuticle.

Not only is it admitted by many authorities (though not yet definitely proven) that such is not the case, but it has even yet to be proved whether the germ of the disease ever occurs in the desquamating skin at all. If such were the case, surely the fine branny scales, shed profusely by most patients, and wafted freely about by every breath of air, would carry infection to large numbers of the susceptible ndividuals in the immediate neighbourhood of houses or hospitals containing scarlet fever patients. Yet the "striking distance" of scarlet fever is surprisingly small, and such centres do not act to any extent as foci of infection.

On the other hand, it has been most conclusively proved by the classic, if unjustifiable, experiments of Hickler, that the mucus from the mouth and throat of a scarlet fever patient is highly infectious, even when diluted with weak carbolic lotion, till long after the visible signs of the disease have disappeared. It is difficult to understand how Dr. Milne's two-hourly painting of the tonsils (and that only during the first twenty-four hours) with 10 per cent. carbolic oil—itself an antiseptic of very doubtful value under any circumstances—can possibly render them or the throat innocuous. Unfortunately the specific organism of scarlet fever has not yet been discovered, but

[1] *The Pulse*, 1890, p. 86.
[2] *Chir. Med.*, New Syd. Soc., vol. i, p. 625.
[3] *Principles and Practice of Physic*, 4th edition, vol. ii, p. 360.
[4] *Clinical Researches on Disease in India*, 1860, p. 55.

from our disappointing experience of the utter uselessness of local applications (apart from the merely mechanical effect of douching) in the closely analogous disease, diphtheria, in which bacteriological verification can be obtained throughout the course of treatment, it is highly probable that Dr. Milne's procedure of tonsil painting has no other effect than that of relieving symptoms. How does Dr. Milne explain the by no means uncommon occurrence of "return" cases where the "infecting" case had finished desquamating long before, and had no unhealthy abnormalities, such as rhinorrhoea or otorrhoea, evident? Also the non-occurrence of "return" cases where children have been sent home from hospital while still desquamating freely, and without having undergone any kind of skin inunction? His explanation of the "return" cases quoted by him is, to put it mildly, a trifle far-fetched.

Much careful work on this subject has been done by Millard, Priestley, Lauder, and more recently by Simpson, Cameron, and Mervyn Gordon, to name only a few of the observers on strictly scientific lines, and doubtless they would hail with delight the discovery of so simple a way out of the great difficulties surrounding this complex question were it ever proved to be efficacious.

The use of eucalyptus oil for inunction is not as unknown to a "conservative" profession as Dr. Milne suggests. There are few fever hospitals of any importance in the country that have not at some time or other, I imagine, made trial of it and found it both troublesome and of little or no value, besides being most unpleasant to the unfortunate sufferers, whom I myself have known to cry for long enough after the oil had been applied to the scalp, for instance, on account of the smarting of the eyes which resulted.

What possible effect this inunction of the skin can have upon the throat Dr. Milne alone knows. Perhaps the action is the same as that of the whitewash on the scriptural sepulchres. To "keep the aroma in the rooms, and sprinkle a little (of the eucalyptus oil) on the beds day by day," is doubtless most gratifying to those who like the smell; but has anyone ever yet heard of a mere aroma killing microbes?

With the number of notifications of scarlet fever throughout the country showing no diminution year by year, but rather the reverse, for which the existence of unrecognized cases is largely blamed, is it not most unjustifiable for known cases, while still undoubtedly in an infectious condition, to be deliberately turned out amongst the general community to mingle freely with them? While exposing themselves in public places and in public conveyances, how does Dr. Milne know how many persons of whom he never hears his patients may have infected, directly or indirectly? That *he* believes his cases to have been rendered free from infection, on such grounds as he has set forth in his paper, will hardly carry weight against the scientific evidence to the contrary.—I am, etc.,

Newcastle-upon-Tyne, Jan. 25th. HAROLD KERR.

SIR,—I can verify the statement of Dr. J. Sadler Curgenven in the BRITISH MEDICAL JOURNAL, p. 251—namely, that the credit of the eucalyptus treatment is due to his father, Dr. Brendon Curgenven. In the BRITISH MEDICAL JOURNAL, March 29th, 1890, is a report of a paper read by him before the Epidemiological Society, and in the BRITISH MEDICAL JOURNAL, October 26th and November 23rd, 1889, are communications on the same subject. I can well remember reading these at the time, and purchasing some of the special eucalyptus oil—"olensaban," I think it was termed—which I used on every case I came across in my practice at that time.—I am, etc.,

St. Leonards, Jan. 24th. PERCY NEWELL.

OEDEMA OF THE EYELIDS WITH PYREXIA.

SIR,—With reference to the article by Dr. Charles R. Elgood in the JOURNAL of January 9th, p. 88, I cannot help noticing the similarity of the symptoms present to those which occur in mild cases of trichinosis. In fact, the pyrexia and constitutional disturbance associated with marked gastro-intestinal symptoms and transient oedema of the eyelids would, in the absence of proofs to the contrary, at once raise in my mind a suspicion of that disease, which I am inclined to consider more prevalent than is generally suspected. The demonstration of eosinophilia on examining the blood and the finding of adult trichinae in the stools would, of course, easily establish the diagnosis.

That some of the cases should arouse a suspicion of enteric fever was not to be wondered at, as this disease and acute rheumatism are the affections most likely to be confounded with trichinosis, the latter when the young trichinae are migrating in the tendons near joints.

The amount of prostration present seems to vary greatly. I have seen a patient with a high temperature apparently suffering little inconvenience and asking to be allowed out of bed.—I am, etc.,

CHRISTOPHER L. W. BUNTON, M.B.,
Plymouth, Jan. 16th. Fleet Surgeon, R.N.

PERNICIOUS ANAEMIA AND PYORRHOEA ALVEOLARIS.

SIR,—Dr. Byrom Bramwell's interesting note on pernicious anaemia appears to be incorrect in one particular, which is remarkable, as he appears to have considered the condition as possibly due to oral sepsis.

The evidence was clear before him as to the presence of typical pyorrhoea alveolaris at a recent date. "The teeth dropped out." This was absolutely diagnostic of the presence of this disease. The absence of pyorrhoea should always be carefully noted by a dentist who recognizes its less obvious symptoms and signs.—I am, etc.,

London, W. C. WYNN WIRGMAN.

THE APPLICATION OF MENDELIAN RULES TO HUMAN INHERITANCE.

SIR,—I am sorry that Professor Pearson is unable to understand my letter in the JOURNAL of January 2nd. I do not think he can have read it carefully, for there is no reason whatever to conclude that I should interpret his illustrative case in the way he assumes. Mendelians would here reckon four normals and two abnormals. If this were a part of Nettleship's chart, I should include all the normals; but if either or both of these abnormals had *only normal children* I should not count *these* (that is, the children), but stop at the last abnormal in the vertical line of descent. If, on Nettleship's chart, any abnormal has only had normal children, and these are not counted, then there are 134 abnormals out of 274 descendants (of abnormals), and this gives a percentage of 48.9, which is near enough to the 50 per cent. to claim it as Mendelian.

This being what I have done, Professor Pearson has put a wrong interpretation on my words, and though he quoted me correctly as far as the quotation goes, he ought to have finished the sentence. He says his interpretation is the only one he can put on my words, "if we stop at and include the last abnormal," but this quotation stops in the middle of a sentence where there is not even a comma. What I said was, "If we stop at and include the last abnormal (+ brothers and sisters) in each line of descent."

Why Professor Pearson concludes that I should (in his illustration) not reckon the three normals "the tail of the offspring" I cannot imagine, seeing that I distinctly say "+ brothers and sisters," for surely the word "include" refers to them as well as to the last abnormal. Now, if the last abnormal in each line of descent in Nettleship's family had had *no* children there would have been no doubt about the chart being Mendelian.

It may be that my method of counting is not correct, and that one is not justified in omitting the children of "last abnormals," and yet one cannot help being struck with the fact that of the 98 abnormal parents so many as 31 have had only normal children, and, in the absence of any other explanation, I suggested the theory contained in my last letter.

The real point at issue is, Does Nettleship's chart conform to Mendel's law of inheritance, or does it not? I contend that up to a certain point—the last abnormals—it does. Professor Pearson, including the children of these abnormals, says it does not; but until one knows why so many (31) affected individuals should not have any abnormal offspring I cannot see that we are justified in taking Professor Pearson's view expressed in his first

letter, that "the odds are several million to one against Nettleship's material being a sample of a population obeying Mendel's rules."—I am, etc.,

Wrexham, Jan. 20th. H. DRINKWATER.

THE CAUSATION OF INGROWING TOENAIL AND THE LOCATION OF GOUT.

SIR,—The dear old textbooks may often be in the wrong, but it is seldom that they are proved so to be, and I do not think their integrity has been shaken by Dr. Arbour Stephens's observations on the above subjects in the BRITISH MEDICAL JOURNAL of January 16th, 1909.

First, if pressure from contact with the bed during sleep were the cause of ingrowing toenail, this condition would invariably occur at the inner side of the big toe; but it does not, it is quite common at the outer side of the big toe. Secondly, in the position depicted by Dr. Stephens (Fig. 1) the right foot is supported by the resting of the right internal malleolus on the inner side of the left heel, and the right knee is supported on the left knee, and there is no strain whatever on the right big toe, and no pressure worth considering. This also disposes of Dr. Stephens's theory of the location of gout. Fig. 2 calls for no comment beyond the fact that it is a chronic partial luxation due to the continued wearing of pointed boots.

Is there, after all, a necessity for finding a sole cause (forgive the phrase) for the so-called ingrowing toenail? Pressure, dirtiness, traumatism, including a wound by the corner of the nail, may be causes, continued pressure being always a contributory cause.

In two cases, recently under observation, the nails were cut close to the quick, leaving a sharp corner at either side, and it is clear that a slight lesion of the soft parts can be thus started, and a chronic inflammatory condition kept up indefinitely.

The location of gout is generally admitted to be determined by exercise, and as people spring off the big toe in walking, this toe-joint is a very usual sufferer. Gravity congestion is probably often contributory. The fact that the gouty attack is often first noticed on waking requires no more explanation than does muscular stiffness at the same hour, and is due to the slowing of the blood current during sleep, which favours exudation.

A patient of mine, who generally walks, once cycled when "gouty," with the result that the patch of gout occurred the next morning on the right instep instead of the usual right big toe.

Long-continued pressure can cause a localized gouty manifestation, for I have seen it in the elbow and heel in gouty subjects confined to bed for a week or two.—I am, etc.,

Tamworth, Jan. 20th. CHARLES H. JOY.

THE ACTION OF ALCOHOL ON PROTOPLASM.

SIR,—In the JOURNAL of April 18th, 1908, Mr. Kesteven wrote an interesting account of the paralysing and destructive action of alcohol on amoebae when they were immersed in solutions of it varying from 1 to 7 per cent., and seemed to have been struck with the fact that it had no stimulating effect. Did he calculate how much alcohol would be in his body if every one of its cells was bathed in a 3 per cent. solution, and consider what his condition would probably be?

Not far from the same time I saw an account of a similar experiment with paramoecia, but in that case with solutions of only from 1 in 1,000 to 1 in 5,000, and with a result just the opposite to that obtained by Mr. Kesteven. The little animals underwent their multiplications by division several times as often before they died out as when they had no alcohol, and showed greater activity and vitality all the time.—I am, etc.,

Tunbridge Wells, Jan. 18th. EDW. G. GILBERT, M.D.

CONFERENCE ON THE MEDICAL PROFESSION AND FRIENDLY SOCIETIES.

SIR,—I do not know what is the main object of the conference which is to be held in London on Saturday, February 6th; but as we have given considerable attention to this subject in Lancashire, I may be allowed to make two or three remarks.

We are of opinion that the position and circumstances of the working man have very greatly improved since friendly societies were first formed, and that in most cases no corresponding increase has been made in the rate of remuneration of the medical officers.

Through the fact of having medical officers attached to a club their services have been exploited, with the result of considerable advancement and prosperity to it, and so also with regard to industrial assurance companies, for which we have been paid a merely nominal fee. Think of the millions some of these have in reserve, and the part the profession has played in this accumulation. A charitable feeling on our part at first probably had some place, but for many years many medical men have smarted considerably at attending men who were earning increased wages, and well able to pay ordinary fees, and saw no way of altering the condition of affairs.

Now that the profession is getting better organized, there is more hope that something definite can be done. Whilst we have no objection to no restriction being made as to those joining a friendly society, what we contend for is that medical benefits should only be available for those whose wages are below a certain standard. Therefore, the first thing to contend for is a wage limit, and this may be made to vary in town and country.

And so in regard to the remuneration. There should be a hard-and-fast rule that 4s. per annum should be the minimum rate of payment for the medical officer, but in large towns it should not be less than 6s.

These things can be easily obtained by union and organization and the ventilation of opinions in our JOURNAL and at meetings such as the one referred to above.

I feel somewhat concerned in reference to this meeting, as I do not see many names on the card of invitation who have been prominent in the past in dealing with the subject of friendly societies; and I certainly feel that it would be a great sacrifice to attend such a meeting at this time of the year except there would be likely to be some tangible advancement of the subject. On the other hand, for men to stay away who are conversant and have been for many years would be a great mistake if such a meeting went wrong by not having a controlling force present.

As there is some doubt as to my being able to be present I shall feel obliged if these fragmentary remarks can be read by those able to attend.—I am, etc.,

8, Ardwick Green, Manchester, Jan. 26th. G. H. BROADBENT.

THE DEPARTMENTAL COMMITTEE ON THE MIDWIVES ACT AND GENERAL PRACTITIONERS' INTERESTS.

SIR,—Sir William Sinclair has done good service to the general practitioner by drawing his attention through the JOURNAL of January 23rd to the formation of this committee by the Privy Council.

There is no doubt that in 1902 the medical profession was caught napping. There will be no excuse for us if we lose the opportunity now offered to amend the Act, and the present rules of the Central Midwives Board which are only in force until September 30th next.

The British Medical Association has been asked if it desires to tender evidence. The reference to the Departmental Committee is:

> To consider the working of the Midwives Act, 1902, and in particular with reference to the supply of midwives and the cost of training, the remuneration of medical men summoned on the advice of midwives under the rules in pursuance of the Act, and the delegation of their powers by County Councils under the Act.

There seem to be four principles that should be urged:

1. Adequate and immediate representation of the general practitioner by general practitioners nominated by the Association on to the Departmental Committee.

2. Adequate representation of the general practitioner by general practitioners elected by the Association on to the Midwives Board.

3. Adequate guaranteed payment for services rendered to the State by attendance given before, during, and after labour.

4. No *State* subsidizing of midwives.

With these acceded to, the profession can rest content that the Act will not so grossly be able to be worked to the detriment of the doctor or of the woman and child for whose benefit it has been enacted.

Will every general practitioner, therefore, *at once* bestir himself and take steps to induce his local medical society (or Division of the Association, Branch Council or Executive Committee of the Division) to put at the disposal of the Association evidence on the four points referred to the committee, as also a resolution in favour of the four principles enumerated above? Time is valuable.—I am, etc.,

London, S.W., Jan. 26th. E. ROWLAND FOTHERGILL.

THE PUBLIC HEALTH COMMITTEE'S REPORT.

SIR,—If further proof is required of the desirability of the opinion of the Association being taken by a poll of its members instead of by meetings of the Divisions, it can be found in the report of the Public Health Committee. It most fairly states both sides of the question, and is an admirable example of how a report should be drawn so as to inform the members of the *pros* and *cons*, and to obtain their opinions by means of a poll.

The decision to formulate a "declared policy" of the Association on the question of the "desirability of health officers being required to give their whole time to the work" is one of far-reaching importance, and I venture to say that the method of ascertaining the opinion of the members through meetings of the Divisions as at present constituted is likely to give an absolutely wrong impression of their views.

The question is one which affects practitioners in rural districts, whether medical officers of health or not, to a far greater degree than those who practise in the large towns; in fact, as the latter already have whole-time health officers, the question only affects the practitioner in the town to a very minor extent. Yet the meetings of the Divisions, being held in the towns, will be attended by about half a dozen members residing close at hand, and the rural medical officer of health and practitioner will, as usual, be conspicuous by his absence. This half-dozen will probably, after a brief discussion, unanimously pass a resolution the drift of which is a foregone conclusion, and the "declared policy" of the Association on this matter will be settled.—I am, etc.,

Gunnislake, Jan, 25th. ALBERT BOWHAY.

GRATIS PATIENTS.

SIR,—It is ridiculous for a doctor who is making a moderate income to expect his family to be attended for nothing by a general practitioner.

The case is rather different with regard to the services of a specialist, to whom we as doctors have other means of making amends.

Personally, I always pay fees to my family's doctor; but I do so in a proper way, and therefore always succeed in getting the fee accepted.

I think we as a profession are at fault in not accepting fees when they are offered; but, alas! the offer is not always forthcoming. The whole system is an abuse.

Not long ago, a retired surgeon-colonel, holding a Government appointment, brought his child to me. The child needed tonsils and adenoids removed. "You will be able to do the operation in your consulting room, I suppose?" said he. I did what was necessary, but not in my consulting room, and I was never even thanked. This was a man with an income of at least £800 a year.—I am, etc.,

January 17th. F.R.C.S.

INTERNAL INJURY WITHOUT EXTERNAL BRUISING.

SIR,—To judge from discussions that have arisen from time to time with medical friends there seems to be a wide variation of opinion as to the amount of damage that can be inflicted on the internal organs without injury to the skin and superficial structures. The paper in your issue of 16th inst. by Dr. Marten Payne is a valuable contribution to the physics of the subject, and it should help largely to dispel the misconceptions that we sometimes come across, especially in cases that come into court.

Some years ago, when I was in the East, a man was brought in dead, having been killed in a row with another man. At the *post-mortem* examination he was found to have the second to tenth ribs fractured on one side, and the first to tenth on the other. The lungs were badly ecchymosed and the heart ruptured; liver, stomach, kidneys, transverse colon, and spleen all lacerated more or less.

In court the witnesses for the Crown all stated that these injuries were produced by "prodding" in the chest with the sawn end of a bamboo used bayonet fashion.

Now, with all these extensive injuries to the internal organs, there were *no* marks of violence on the front of the body except a severe bruise and slight scalp wound on the left frontal protuberance. The picture presented to my mind was that of a typical buffer accident, and one had no difficulty in coming to the conclusion that the man had first been knocked down and then jumped upon, which subsequently proved to be the case.

I had also many years ago a case of a child aged about 5 years run over by a hansom cab conveying three men and the driver; there was severe contusion and laceration of the lungs, but no skin or rib injury. Any medical man with tropical experience can call to mind many cases of ruptured spleen with no external marks of violence. My object in writing is, if possible, to get a definite expression of opinion from those who have exceptional opportunities of forming one, in order that there may be a diminution in the number of such discrepancies in evidence as is instanced in your correspondent's paper.—I am, etc.,

Bedford Park, W., Jan. 19th. J. SHEPLEY PART.

Public Health

VITAL STATISTICS IN ENGLAND AND WALES (1908).

WE are indebted to the Registrar-General for the following rates, compiled and published for the convenience of medical officers of health. The figures are provisional and subject to revision.

ENGLAND AND WALES.

Annual Birth-rates, Death-rates, and the Death-rates from the Principal Epidemic Diseases.

	Annual Rate per 1,000 Living.				Deaths Under One Year to 1,000 Births.
	Births.	Deaths. Crude.	Deaths. Corrected*	Principal Epidemic Diseases.	
England and Wales	26.5	14.7	14.7	1.29	121
76 great towns ...	27.0	14.9	15.8	1.59	128
142 smaller towns...	26.0	14.0	14.7	1.26	124
England and Wales less the 218 towns	26.2	14.7	13.8	0.99	110

* The corrected death-rates are the rates which would have been recorded had the sex and age constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

COSTS OF DISINFECTION.

IN a case heard by Judge Selfe at the West London County Court on January 15th the question whether the landlady of furnished rooms can recover the cost of disinfecting them was considered. It appeared that the rooms had been taken for a consumptive patient by the defendant. The plaintiff, who let the rooms, was not told that the proposed tenant was in an advanced stage of consumption. After the death, which took place in four days, the landlady expended £2 5s. on disinfection, and judgement was given for this amount. It is interesting to notice that the only other reported case on the subject came before the same judge when sitting at the Folkestone County Court in 1899 (see *Law Times*, 1899, vol. cvii, p. 101). There an innkeeper sued the executors of a guest who died of consumption for the cost of disinfection. It was held that the costs could be recovered on the ground that the law would imply a contract on the part of the guest to pay for any extra expense properly incurred by the innkeeper as a consequence of the reception of the guest. His Honour also decided that on the evidence of the medical officer of health consumption was an infectious disease, and that it would be dangerous to let the rooms again without disinfection.

THE INSPECTION OF MEAT.

IN a recent report, Dr. Robertson, M.O.H. for Leith, stated that no two towns at present had the same system of meat inspection. There was no reason why there should not be a standard. The danger from the consumption of tuberculous meat had been exaggerated; the tubercle bacilli were seldom located in the substance of animal flesh. At present there were instances in which a carcass quite fit for human food was condemned, the butcher having to bear the entire loss.

Obituary.

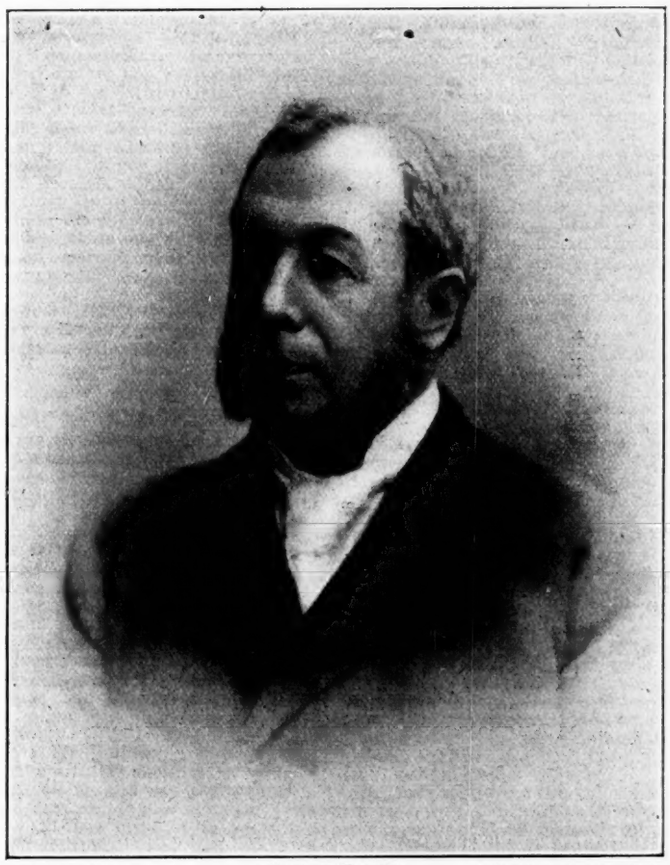
GEORGE EASTES, M.B.LOND., F.R.C.S.ENG.,

FORMERLY TREASURER AND PRESIDENT OF THE METROPOLITAN COUNTIES BRANCH.

THE announcement of the unexpected death of Mr. George Eastes, at one time Honorary Secretary and for many years Treasurer of the Metropolitan Counties Branch, has been received with great regret by all members of the British Medical Association who knew, if only by report, the enthusiastic interest he took in its welfare, and the time and energy which he devoted to work for it as the occupant of the offices mentioned, as a member of the Central Council, and in other capacities. Those who had the advantage of Mr. Eastes's personal acquaintance will miss in him a staunch friend, always ready, not only to offer sound advice, but to take infinite trouble, and give unsparing labour to the study and elucidation of any matter affecting the honour and interests of the profession.

George Eastes was born on May 16th, 1841. He was the eldest child of Mr. Silvester Eastes, M.R.C.S.Eng., J.P., Mayor of Folkestone, who at that time occupied a house in the old town, which clustered round the harbour, while fields, as he remembered, then extended on the West Cliff right up to the old parish church. His first school was at St. Margaret's Bay. He then went to Tonbridge Grammar School, where a somewhat severe rule prevailed, for the boys were compelled to rise at 5 a.m. and work till breakfast at 8 a.m. Later on he was transferred to Maidstone School, and then, after the signing of the peace following the Crimean war, he wrote a competition poem on "Peace," for which he gained the first prize. Leaving Maidstone, where he had chiefly distinguished himself in mathematics, at the age of 15, he was apprenticed to his father, and worked in his surgery till October, 1860, when he entered Guy's Hospital. While pursuing his first year's work he saw the advantage of a London University degree, and passed the matriculation and Preliminary Scientific Examinations of the University of London in rapid succession. In 1864 he passed the Intermediate M.B. examination, and obtained the diploma of M.R.C.S.Eng. In 1866 he graduated M.B. and took the diploma of L.R.C.P.Lond. He took the diploma of F.R.C.S.Eng. in 1868. He served as House-Surgeon at Guy's Hospital, and was afterwards appointed Surgical Registrar and Tutor, a post he held for two years. During these years he was a close friend of Hilton Fagge, Phillips, Oliver Duke, and of his seniors he had the profoundest affection for Hilton, Cooper Forster, Moxon, and Gull. In 1868 he succeeded Dr. Egbert Charlton in practice at 5, Albion Place, London, W. He married, on February 9th, 1869, Fanny Elizabeth Friend, of Hambledon, Hants, who with three children survives him. During the years of general practice he displayed great activity in all matters connected with the profession. In 1871 he published a *Memoir of Harvey*, who was a native of Folkestone; and during the succeeding years he started, and almost solely by his unaided personal efforts raised, a fund for a memorial to Harvey, which took shape ultimately in the statue on the Lees at Folkestone which was unveiled in August, 1881.

His close connexion during these early years with the Guy's surgeons brought him much anaesthetic work. He was one of the founders of the Society of Anaesthetists, and for fourteen years was Anaesthetist to the Great Northern Hospital; it was in this sphere that he performed some of the most laborious work of his life. He was Secretary of the first committee appointed by the British Medical Association to inquire into the various anaesthetics, their uses, modes of administration, dangers, etc.; thousands of communications were received, and to the labour of tabulating results, in which to some small extent his family participated, he nightly devoted many hours. His report was published in the fourth volume of the *Transactions of the Society of Anaesthetists*.



Photograph by] GEORGE EASTES. *[Adolphus Tear, Ipswich.*

Mr. Eastes joined the British Medical Association early in his career, and was elected Honorary Secretary of the Metropolitan Counties Branch in 1886. He retired in 1888, and four years later was elected Treasurer of the Branch, an office which he retained until 1899. In 1900 he became President, delivering in that capacity an address on Our Numbers and Our Work at the Close of the Century. In 1901 he again accepted office as Treasurer, and finally gave it up in 1903, being elected Vice-President of the Branch in the following year. He was Secretary to the Collective Investigation Committee of the Branch from 1885 to 1887. He was also for many years, and down to last July, a Representative of the Branch upon the Central Council, and for part of that period was an active and useful member of the Journal and Finance Committee. He was Secretary of the Section of Public Medicine at the Annual Meeting of the British Medical Association in Leeds in 1889, and Vice-President of the same Section at the Annual Meeting in Newcastle in 1893.

At some date, which cannot now be definitely ascertained but probably about 1874, Mr. Eastes joined the staff of the BRITISH MEDICAL JOURNAL, and for a good many years, under the editorship of Mr. Ernest Hart, took an active part in the working, serving for some years as a sub-editor along with Mr. Doran and the late Dr. Fancourt Barnes. He always maintained his interest in journalistic work, and was an occasional contributor to our columns down to the time of his death. In this work, as in everything else to which he turned his attention, Mr. Eastes showed himself a man of sound and temperate judgement, ready to take any pains to master his subject, and possessing an admirable power of stating a difficult and complicated subject with lucidity.

He was an active member of the Royal Medical and Chirurgical and of the Obstetrical and Clinical Societies of London, as well as of the Harveian Society. Of the last named he was President in 1895, and delivered

an address on Evolution in Treatment from 1831 to 1895.

He was secretary and one of the founders of "The Guyite Club, 1863," which post he held from its initiation to the time of his death. It originally had forty-three members, of whom now only fifteen survive. In this little society much of his love and constant loyalty to old friends was exhibited, and amongst these few old Guy's friends his memory will be cherished *Dum licet nobis* (the motto of the club).

In his home his chief characteristic was his absolute truthfulness, honesty of purpose, and belief in the goodness of others. Method and accuracy ruled his every action. Early in life he was fond of riding, shooting, and the sea, and possessed a veritable passion to get to the top of a hill to take a wide view of Nature. Later in life he indulged to a small degree a strong wish to travel. His practice was not at first very lucrative, and for long he had had to battle with pecuniary difficulties, and only finally successfully won the battle at quite a recent date. But he never allowed these anxieties to interfere with his public work, nor with the genial greeting which he always had for friends old or new.

Mr. Eastes seemed to those who knew him well to have aged a good deal during the last few years, but he experienced no symptoms of an alarming character until January 18th, when he had a severe attack of pain; at the same time he was suffering from catarrhal symptoms, and was advised to keep the house. After a few days' rest he appeared much better, but on January 23rd he had a recurrence of the pain, and almost immediately expired. The first part of the funeral service, conducted by the Rev. Prebendary Gurdon, was held at Christ Church, Lancaster Gate, on January 27th. It was attended by a large number of his old friends and colleagues, including Sir Jonathan Hutchinson, Dr. Frederick Tayler, Mr. Butlin, Dr. F. T. Roberts, and Mr. Alban Doran; the British Medical Association was represented by Mr. Edmund Owen and Mr. Guy Elliston. The interment took place at Folkestone Cemetery on the same day.

WE regret to record the death of Dr. SYDNEY SHAKSPERE BROADBENT, of Penton House, Hanley, Staffordshire, at the age of 57. His health began to fail at the beginning of last year, and in July the renal trouble from which he was suffering developed materially. It caused him much suffering, but in spite of it he grappled manfully with his duties, and it was not until about ten days previous to his death, at the beginning of December, that he finally gave up work. Dr. Broadbent, who was born in Stalybridge, received his medical education at Sheffield Medical School, and in 1896 became L.R.C.P., L.R.C.S.Edin., and L.F.P.S.Glas. A few years later he settled down in practice at Hanley, where his kindly disposition made him very popular with his patients. Outside his work he figured very little in public, except in connexion with St. Jude's Church, at which he held the office of churchwarden. He was often to be seen, however, at meetings of the local Branch of the British Medical Association, of which he was a member, and was well esteemed by his colleagues. A man of artistic tastes and quiet unobtrusive manner, he did much good in his life, and exercised a healthy, refining influence on those about him. His funeral was attended by a large gathering of his old patients and personal friends, who thus testified to the high regard in which they held his professional qualities, and to their esteem for him as an upright, honourable man. Dr. Broadbent was married, and leaves a widow but no children.

Dr. GEORGE DICKSON died at his residence, 9, India Street, Edinburgh, on January 18th, in his 71st year. His whole professional life was spent in Edinburgh. He graduated M.D.Aber. with honours in 1864, and took the diploma of F.R.C.S.Edin. in 1882. He was a quiet and unobtrusive man, who had many warm friends; he was a notable Freemason, and was so highly esteemed by his brother Masons that there was scarcely a lodge in the district of which he was not an honorary member. He was connected with the Lodge of Edinburgh Mary's Chapel, No. 1, for forty years, and for five years, from 1891, was Right Worshipful Master. He was associated with the Grand Secretary and the late Past Master in editing the history of the lodge. At the time of his death he was Librarian and Historian of the lodge, and he devoted much care to the old minutes, which are in existence from July, 1599. He was a prominent member of the Grand Committee of the Grand Lodge. He was Secretary of the lodge when the King (then Prince of Wales) was made a member of the lodge, and one of Dr. Dickson's treasured possessions was the pen which the Prince of Wales used on that occasion. At the tercentenary celebration of the oldest minute of his lodge Dr. Dickson was presented with his bust by the brethren of the lodge. A year ago, at the annual festival, after the election of the office-bearers of his lodge, Dr. Dickson was presented with a beautiful silver salver in recognition of the affection and esteem in which he was held by the brethren of the lodge. He used to say that he could count his absences from the lodge on the fingers of one hand. He is survived by a widow, one son, and three daughters

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WE have to record the death of Dr. LORRAINE, of Hawick, which occurred on January 12th, after an illness of about three months. Born fifty-six years ago, Dr. Lorraine took the diplomas L.R.C.P.and S.Edin., in 1879. After spending three years in Colorado and Texas, he returned to Britain, practised in England for a short time, and then settled down in Hawick. He held the appointment of Medical Officer to Stobs Camp. He is survived by a widow and family.

THE German Surgical Congress will hold its thirty-eighth annual meeting this year in Berlin, from April 14th to 17th, under the presidency of Professor H. Kümmell, of Hamburg.

Medico-Legal.

AN ACTION FOR SLANDER.

In the Court of Appeal.

(Before Lords Justices VAUGHAN WILLIAMS, FARWELL, and KENNEDY.)

NICOLAS *v.* LAURENCE.

THIS was an application by George Laurence, of 61, St. Fillans Road, Catford, for the new trial of an action brought against him by John Papa Nicolas, practising at 87, Dowan Hill Road, Hither Green, in which the plaintiff had recovered £200 as damages for slander, the jury adding a rider to the effect that the plaintiff should be restored to the *Medical Register*. The action had been tried by Mr. Justice Grantham and a special jury at the end of last year, and the hearing of the appeal had been specially expedited.

Mr. Lush, K.C., and Mr. Neilson (instructed by the Solicitor to the London and Counties Medical Protection Society) appeared for the appellant; Mr. F. E. Smith, K.C., and Mr. D. M. Hogg for the respondent.

In opening the case, Mr. Lush stated that the application was made on various grounds, including the non-reception of evidence and misdirection. The respondent, John Papa Nicolas, was a Greek subject, and held good testimonials. In 1906 a Dr. Atkinson engaged the respondent as his assistant at Catford. The respondent filled this post for about a year, when Dr. Atkinson engaged Dr. Laurence, the appellant in this case, who subsequently became his partner. Before the respondent left the employment of Dr. Atkinson, that gentleman found that he had been canvassing his patients and telling them that he would charge lower fees. He also heard that J. Papa Nicolas was making disparaging statements with regard to him, and in consequence he wrote a letter, dated October 21st, 1906, to the gentleman who had recommended Nicolas. That letter was the subject of an action for libel against Dr. Atkinson, which was now pending. Having made these discoveries, Dr. Atkinson communicated with the London and Counties Medical Protection Society, who presented Nicolas before the General Medical Council for canvassing and disparagement of Dr. Atkinson. The action now under consideration was for certain slanders alleged to have been uttered by Dr. Laurence. The writs against Dr. Laurence and Dr. Atkinson were not issued until just before the proceedings at the Council. The charges were fully investigated by that body.

Mr. Justice Vaughan Williams: Are we to consider the finding of the Council?—Yes.

Mr. Lush, continuing, said that Dr. Nicolas emphatically denied the charges, although a number of witnesses were called. The result was that both charges were said to be proved, and he was struck off the *Register*. In these circumstances the present action came on for trial. The first of the alleged slanders, said to have been uttered in April, 1907, to Mr. Dean, a tradesman, was in the following terms: "Dr. Nicolas is setting up a bit of a house in Dowan Hill Road; he is trying to capture some of our patients. I warn you to be careful how you let an account run with Dr. Nicolas." Later on he said: "Dr. Nicolas has behaved very badly. He has stopped pregnant women in the streets and asked them to go to him, and he has canvassed all Dr. Atkinson's patients; but what can you expect of such a half-bred blackguardly mongrel, a Greco-Turk?" In July, 1907, he said to a Mrs. Hobbs: "Dr. Nicolas goes from door to door canvassing Dr. Atkinson's patients, like a milkman going his rounds in the morning; but he is not an Englishman, or he would not have done such a thing. . . ." In December the respondent made a statement to a Mr. Bellman, a chemist, to the effect that the plaintiff had paid his (Mr. Bellman's) predecessor a commission on all patients sent, and was trying to get his patients away from him, and, further, that "they had got sixty affidavits to show that he had done his best to get my patients by offering to attend them cheaper."

Continuing, Mr. Lush said that the only part of the alleged slanders which the defendant did not justify was that relating to Dr. Nicolas giving commission to the chemist. The case for the plaintiff had been presented by counsel to the jury as in substance an appeal from the conviction by the General Medical Council. The plaintiff was called as a witness, and in cross-examination denied that he canvassed or that he disparaged. Counsel had suggested to Dr. Nicolas that he was taking a house in Catford with a view to practising there, but he explained that by saying that he was going to have a partnership. The defendant had called some twenty witnesses to prove that the statements were made, when the jury intimated that they had heard enough of this evidence, but it appeared that this was only the opinion of eleven jurors. The defendant could have called many more.

Lord Justice Vaughan Williams: In what capacity did the Medical Protection Society Act? Can a stranger prosecute a doctor before the General Medical Council? The finding of that body is not *inter partes* in this case.

Mr. Lush referred to Hill *v.* Clifford, 1907, 2 Ch., at p. 236, where it was decided that an order of the General Medical Council to strike a dentist off the *Dentists' Register* was held to be admissible as prima facie evidence that he was guilty of acts "infamous or disgraceful in a professional sense." Mr. Lush then proceeded to state the grounds of appeal. He complained that Mr. Justice Grantham had stopped him cross-examining the plaintiff. Thus he had sought to cross-examine upon the statement that there was to be a partnership, but the judge had refused to allow it. This had been made much of in the reply on the part of the plaintiff.

Lord Justice Vaughan Williams: Do you ask for anything more than a new trial?

Mr. Montague Lush: No; because there is one slander which my client does not justify.

Lord Justice Kennedy: You say that Mr. Justice Grantham should have directed the jury expressly on that one slander? That he should have asked the jury to say whether the plaintiff was entitled to damages on that head, or whether it was not really so mixed up with the canvassing that it ought not to be considered?

Mr. Lush: That is so.

Lord Justice Vaughan Williams (to Mr. Smith): If the ruling as to the partnership was wrong, is it worth while having the summing-up read?

Mr. Smith: The evidence of the plaintiff has hitherto been read.

Lord Justice Kennedy then read Mr. Justice Grantham's note of the evidence, in the course of which the plaintiff denied that he had canvassed the patients, or that he had said that his fees would be lower.

Lord Justice Vaughan Williams: In a case in which an assistant has given no bond, is it infamous for him to canvass the patient of his late employer?

Mr. Lush: Yes; but mere setting up in practice is not infamous. Here we sought to prove canvassing both during and after the employment. It is infamous to seek to detach patients.

Lord Justice Vaughan Williams: Solicit is a better word; it is more definite. Personal solicitation is the kind of thing which an honourable man would not like to do.

Mr. Lush then read Mr. Justice Grantham's summing-up, in the course of which the learned judge made a number of comments on the General Medical Council. Commenting on the summing up, Mr. Lush said that even if the conduct of the General Medical Council was not in question, the defendants were entitled to go into the question of disparagement of Dr. Atkinson as relating to the character of the plaintiff. Finally, the summing-up had not presented the case fairly. The finding of infamous conduct was binding, although, of course, it was open to the plaintiff to show that the facts on which the charge was based were untrue.

Mr. F. E. Smith, for the respondents, submitted that the jury might well have taken the view that to make a suggestion that the plaintiff had bribed a chemist was a serious matter in respect of which they awarded damages. The defendant himself had admitted that to bribe a chemist would be infamous conduct.

Lord Justice Vaughan Williams: The fact that the plaintiff was guilty of canvassing may have induced the jury to reduce the damages which he might have had in respect of this matter.

Mr. Smith said that, in his view, the damages had been so ascertained, but he (counsel) had not asked for excessive damages.

Lord Justice Vaughan Williams: The words you used do not amount to a withdrawal of a claim for substantial damages.

Continuing, counsel said the damages were awarded after due consideration of all the facts. With regard to the disparagement, that was an issue in the other action brought against Dr. Atkinson.

Mr. Lush then commenced to reply.

Lord Justice Vaughan Williams: What do you say as to the excessive damages and as to misdirection?

Mr. Lush said that, as to excessive damages, it was difficult to say what was excessive and what was reasonable.

Lord Justice Vaughan Williams: If the jury took the view that the violent language used was unjustifiable that would leave the damages at large.

Mr. Lush said that the rider added to their verdict by the jury was very significant. They expressed the view that this gentleman should be restored to the *Register*. That being so, the defendant ought to have been allowed to adduce evidence that the plaintiff had disparaged Dr. Atkinson's professional ability. Whenever a plaintiff gives evidence to put himself on a pinnacle so as to increase damages the defendant should be allowed to call evidence to rebut it. Here was a man who deliberately gave false evidence.

Lord Justice Vaughan Williams: That is a grave charge, as to which one must consider the plaintiff's evidence if it is necessary to go into it.

Lord Justice Vaughan Williams, in the course of his judgement, said that they thought there should be a new trial. A new trial was an unsatisfactory thing, because it inevitably involved the parties in additional expense. As a rule, the judges were bound to leave questions of fact and the assessment of damages to the jury, but in this case they thought they should interfere. It was no ground for ordering a new trial that the learned counsel for the plaintiff had said what he did say to the jury on the question of damagas. Those observations were made in the presence of judge and jury; and upon hearing them it became the duty of the judge to direct the jury what to take into consideration in assessing the damages. In the circumstances of the case it might be expected that the judge should say to the jury that they were giving damages to a man who had been guilty of unprofessional conduct. That was a material fact for the jury to consider. In these circumstances no specific direction having been given by the judge as to the damages, he thought this verdict and judgement should be set aside. He did not wish to say anything that was not

necessary, having regard to the fact that there was to be a new trial.

Lord Justice Farwell and Lord Jusdice Kennedy concurred, and a new trial was ordered, the plaintiff paying the costs of the appeal; the costs of the first trial to abide those of the second.

AN ACTION FOR LIBEL.

MACLEOD v. MULLOCK AND TRIPP.

IN this case, which was heard by Mr. Justice Lawrance at the Suffolk Assizes on January 22nd and 23rd, the plaintiff sought damages against the defendants for libel.

Mr. F. E. Smith, K.C., and Mr. Hansell were for the plaintiff; Mr. Hohler, K.C., and Mr. Wild for the defendants. Mr. H. C. Dickens watched the case on behalf of the British Medical Association.

According to the statement of claim, it was alleged that in or about the early part of May, 1908, the defendants, acting by the defendant Mullock, falsely and maliciously wrote and published of the plaintiff and of him in his profession to Dr. Wilson Tyson a letter which contained the following statements:

"Dr. Macleod tried to get the use of a bed for one of his patients at the Southwold Hospital without asking the permission of the staff. . . . Dr. Macleod also touts for patients, and I will give you a specific instance of this. On May 2nd he approached a patient of mine who is the caretaker of the local golf club, and the following conversation ensued: 'You are looking very badly?' 'I have one of my headaches,' she replied. 'I must give you something for it,' said he, 'but as I cannot examine you here, come round to my house to-morrow, and I will see what I can do for you.' She demurred, but he over-persuaded her. She went to his house, and he kept her there for one and a half hours, and examined her eyes, etc. I heard a rumour of this on the 4th inst., and went at once to my patient, when she told me exactly what occurred. She said she had no wish to leave me, and was quite satisfied with the way I had always treated her and her family. . . . It is necessary to call attention to another respect in which Dr. Macleod is guilty of a breach of professional etiquette. He gets his wife to call on my patients, and she occupies herself in advertising his successes and in insinuating that he has knowledge and experience superior to that possessed by other men practising locally. . . . I should also add that Dr. Macleod gave Dr. Tripp and myself a promise that if he were called in to see any of our patients he would inform us of the fact. This promise he has repeatedly broken."

The defendants pleaded privilege. They said that they were members of the British Medical Association, one of the objects of which was the maintenance of the honour and interests of the medical profession. They further alleged that Dr. Wilson Tyson was at the time the Secretary of the North Suffolk Division of the Association, of which Division the defendants were members, and that it was the duty of Dr. Tyson to inquire into and deal with any matters affecting the maintenance of the honour and interests of the profession. They therefore had a common interest with Dr. Tyson.

Mr. F. E. Smith, in opening the case, said that his client had at one time been a member of the British Medical Association, but since he had resigned that body had no jurisdiction over him, and he would contend that the defendants had no right to make complaints about him to the Medical Association. The plaintiff came in March, 1907, to settle in Southwold, where the two defendants, Dr. Mullock and Dr. Tripp, were already in practice. In May, 1908, Dr. Mullock, acting on his own behalf and on that of Dr. Tripp, wrote to Dr. Tyson, the honorary secretary of the local Division of the British Medical Association, of which the defendants, and not the plaintiff, were members, the letter quoted above. Dr. Tyson, having consulted his committee, and having received a telephonic communication from the defendants leaving the matter in his hands, communicated by letter with the plaintiff, specifically indicating the charges which the defendants had made against him, and offering the arbitrament of the British Medical Association should he desire to offer any explanation. The plaintiff, in answer, wrote refuting the various charges made, and expressing a hope that the influence of the Association might result in a retractation and apology by the defendants, though he did not admit its authority to decide such a serious matter. No apology being forthcoming, these proceedings were commenced.

At the commencement of the plaintiff's case Dr. Bateman, Secretary of the Medical Defence Union, was called to produce a letter from the defendants. He objected to do so on the ground that it was privileged.

Mr. Justice Lawrance ordered it to be admitted.

The plaintiff then gave evidence, in the course of which he refuted the charges made against him in the letter above set out.

Other witnesses in support of the opening having been called, Mr. Hohler submitted that the occasion was privileged, whereupon Mr. F. E. Smith said he was quite satisfied to treat the occasion as privileged, and to submit the question of malice to the jury.

The defendants both gave evidence, and said that they felt justified on the facts before them in going to the British Medical Association for advice, and that they did not expect Dr. Tyson to communicate with the plaintiff. They denied the existence of any malice towards the plaintiff. They still believed the charges made to be true, but had not justified on the advice of their solicitor, there not being sufficient legal proof of the facts alleged.

His Lordship, in summing up, said, according to the report in the *East Anglian Daily Times*, that there was no doubt that the occasion on which the defendants wrote the libel was privileged, and the question was whether the defendants had forfeited the advantage of this by not using it rightly. In order that the privilege might be good, it was necessary that the words should not be malicious, if true. Malice would be established if it could be shown that the defendant had some indirect motive, or some spite. The first thing to inquire into was whether the words used were true. If a defendant said the words were true, and proved them to be true, there was an end of the matter. If he did not do that, the door was open to him to say that he honestly believed that what he wrote was true. There was also a middle position. If a man recklessly made a statement of this kind, not making inquiry whether it was true or not, that was malicious, and that was the question they had to ask themselves in this case, and also whether these gentlemen had some indirect motive. There might, for instance, be jealousy of a new doctor coming to Southwold. The question was whether, when Dr. Mullock wrote the letter to the secretary of the Division of the British Medical Association, he was using the occasion honestly, or was abusing it. If a person on such an occasion stated what he knew to be untrue, there would be no doubt that he was abusing the occasion, but there was a state of mind short of telling a deliberate falsehood by which a person might be held by a jury to be abusing the occasion, and in that sense to have spoken maliciously. If a person, through being very angry, or from some other wrong motive, allowed his mind to get in such a state as to make him cast aspersions on another person recklessly, not caring whether they were true or false, a jury would be justified in finding that he had abused the occasion. It had been said that anger would be such a state of mind, and he thought a gross and unreasoning prejudice would be such a state of mind. Dealing with the letter itself, he said that there was a reference at the outset to the plaintiff going to Southwold. He, of course, had a perfect right to go there. If there came to-morrow a cloud of ten thousand doctors to Southwold, they would have a perfect right to go there, though, of course, nobody wanted to have any competition if they could possibly help it. A point had been made that in the letter to Dr. Tyson the defendants only asked for advice. Asking for advice did not excuse an untrue statement. There was one thing they had learnt from this case, and he thought it would be very useful to all of them. They must remember that when they went to a doctor he thereby acquired some interest in them until the day of their death. It might be desirable when one went to a doctor to begin with the remark, "I am a patient without prejudice." If they did not say that, the doctor might pursue them to the end of their lives. He would never let them go if he could help it. After dealing with other portions of the letter and the allegations contained in it, his lordship concluded by saying that Dr. Tripp had nothing to do with the letter of May 7th to Dr. Bateman, and if the jury took a more serious view of the case because of that letter, that ought not to be visited on Dr. Tripp, but it ought to be visited on Dr. Mullock.

The jury returned a verdict for the plaintiff with £300 damages. Judgement accordingly.

WORKMEN'S COMPENSATION CASES.

Cardiac Strain.

JAMES COE *v.* THE FIFE COAL COMPANY was an arbitration under the Workmen's Compensation Act, before Sheriff-Substitute Hay-Shennan at Dunfermline, in connexion with an injury sustained by the appellant, Coe, while in the employment of the Fife Coal Company. Coe, along with two other men, was engaged in driving a heading off the main level up to a gradient of 1 in 3½. The heading had been driven about 60 ft. up. Rails had been laid down, but no wheel had been put up, and the men had to let the full hutches down the steep gradient by hand. The work involved great strain. The appellant had repeatedly complained about the want of a wheel, and on May 1st he refused to go to work on this ground, but did go on the promise that the matter would be attended to. When letting down the ninth or tenth hutch he felt a sudden pain in his chest, and sat down, saying that he had jerked himself. He continued to work intermittently for about a week, and was thereafter totally incapacitated until August 10th, but he has now completely recovered. The Sheriff found that the cause of Coe's incapacity for work was cardiac breakdown, due to the fact that the work in which he had for some days been engaged was too heavy for him; that the incapacity was not caused by accident within the meaning of the Act, and that the appellant was therefore not entitled to compensation. On appeal to the Court of Session, the Division affirmed the Sheriff's decision, and found Coe liable in expenses.

The Lord President said the question put to them was whether the injury to the workman was an accident within the meaning of the Workmen's Compensation Act. He confessed that he found the case one of great delicacy and difficulty. Where so many had failed, he was not going to try and define what an accident was. But he could say without fear of being wrong that accident connoted something different from disease. Where what had gone with a man had had its origin in something which happened during his work, it became difficult to say in certain cases whether there had been an accident

or not. Cases at both ends of the line were very easy. A broken leg or scarlet fever would be very easy to judge, the one the one way and the other the other. But with cases just about where the line might be it became a matter of great difficulty. His lordship came to the conclusion, though not without hesitation, that as the sheriff had the advantage of a medical assessor, and had the assessor's views upon what was the matter, that it was not for the court to interfere with the judgement on what was primarily a question of fact. It might be very truly said that there was not much difference between straining the muscles of a man's back and straining the heart, which after all was just a big muscle. But, on the other hand, the view which the doctor had taken was simply that the man was overtired by over-exertion. Upon the best consideration, his lordship had come to think that the only thing they could do was to adhere to the judgement of the sheriff.

Lord Kinnear and Lord Pearson concurred.

ILLEGAL CREMATION.

AT the Lambeth Police Court on January 18th Ada Emma Webb, of Westmoreland Road, Camberwell, was summoned for having on December 29th last unlawfully and knowingly carried out, procured, and taken part in the burning of certain human remains—to wit, the remains of a certain child—except in accordance with the regulations and provisions of the Cremation Act, 1902. According to a report of the case published in the *Morning Advertiser* of January 19th, Florence E. Rogers, a barmaid, stated that in December last she was expecting her confinement, and the child was unexpectedly born dead about 2 o'clock on the morning of December 29th. She said nothing about the matter, and at her request Miss Kirby, another barmaid, the same afternoon took the body of the child, wrapped in a nightdress and some brown paper, to Mrs. Webb. That was the last the witness saw of the body. Grace Kirby said she took the body of the child and half a sovereign to Mrs. Webb's house. Mrs. Webb said she had no idea of Miss Rogers's condition, and that she was a wicked girl. The defendant and the witness went to an undertaker named Simpson, taking the body with them. The undertaker said that he could not possibly take the body without a doctor's certificate. Mrs. Webb and herself then returned to Mrs. Webb's house, and the witness then left her, leaving the body behind. Mrs. Webb said she would get rid of it the same night. Detective-Inspector Hawkins stated that on January 11th, accompanied by Detective-Sergeant Hedges, he called upon Mrs. Webb, and said to her that he was inquiring what had become of the body of a baby brought to her by Kirby on December 29th. The defendant replied that Kirby brought the baby to her house; she took it to the undertaker, but he would not bury it because she had not got a doctor's certificate; Kirby left half a sovereign with her, and she burnt the body in her kitchen stove. Addressing the Court for the defence, Mr. Robinson questioned whether there had been an offence under the Cremation Act of 1902, which, he suggested, related entirely to burnings in crematoria. He submitted that, although the defendant acted foolishly, she was a person deserving of sympathy rather than of censure. Mr. Hopkins, the magistrate, said he did not see how he could possibly hold that the defendant did not come within the terms of the section under which the proceedings were taken. At the suggestion of the magistrate the defendant (who was stated by Inspector Hawkins to be a most respectable woman) went into the witness-box. She said she did not know that Rogers was expecting to be confined, and the first she heard of the matter was when the body was brought to her house by Kirby. She still had the 10s. which was brought with the body. She made an effort to see Rogers, but failed. Mr. Robinson thought it was perfectly clear that the defendant did not do this for profit. Mr. Hopkins remarked that when the papers in this case were put before him he thought that it seemed hard that the defendant should be made the scapegoat for the offence of others, but at the same time one saw that she had not the strength of mind to throw off the responsibility which they put upon her shoulders. The defendant took upon herself the responsibility of dealing with the body of a child of the history of whose birth she knew nothing, and brought herself within the section of the Act. She would have to pay a penalty of £10, and 2s. costs. The magistrate expressed his willingness to allow the defendant a fortnight in which to find the money.

CONVICTION OF UNQUALIFIED DENTISTS.

AT the Rhyl Police Court, on January 12th, a summons was heard against Richard Hanlon, of Rhyl, who was charged on the information of David Hugh Jones, L.D.S., of the same town, with the offence that he, not being registered under the Dentists Act, 1878, and not being a legally qualified practitioner, unlawfully used an addition or description implying that he was specially qualified to practise dentistry. Mr. Joseph Lloyd appeared for the informant, and stated that the action was supported by the local dentists and by the London and Counties Medical Protection Society, Limited, and produced circulars which defendant had printed and caused to be distributed. For the defence Mr. W. Russell (Messrs. Russell and Russell, solicitors, Bolton) appeared. No evidence was called. The defendant was fined 10s. and costs.

At the same court A. George, of 16, Water Street, Rhyl, and Thomas Thurgood, of Wellington Road, Rhyl, pleaded guilty to similar charges, and they were mulcted in the same fine and costs.

A COMPANY AS DENTIST.

ON January 23rd Mr. Justice Swinfen Eady heard the action of Attorney-General against George Smith, which was brought at the instance of the British Dental Association for alleged breaches of the Dentist Act, 1878.

Mr. Micklem, K.C., and Mr. A. W. Turner appeared for the plaintiff; the defendants were not represented.

It appears that the company had been formed in 1906 to carry on the business of George C. Smith, whose name had been struck off the *Dentists Register* in 1906. Since that date several convictions had been secured against him under Section 3 of the Act, for practising without a qualification. It was alleged that the company was unlawfully carrying on the business of dentists at several places in London and the neighbourhood. They employed the defendant, George C. Smith, and other persons not being registered dentists or legally qualified medical practitioners to carry on the practice. The question for decision was whether the company was a person within the meaning of Section 3 of the Dentists Act 1878, and the plaintiffs relied upon the case of Pharmaceutical Society *v.* London and Provincial Supply Association. They also referred to the case of the King *v.* the Registrar of Joint Stock Companies, a case decided by the Irish Courts in 1904, where it was held that "dentists" meant "registered dentist," and that, as a company could not be registered under the Companies Act, it could not be registered as a dentist. They also referred to the Irish case of Attorney-General *v.* Myddleton's Limited, where it was decided in 1907 that a company may be restrained from using the word "dentists" in such a way as to amount to a false representation, leading the public to believe that the persons it employed were qualified dentists. Mr. Justice Swinfen Eady granted a perpetual injunction and ordered the company to pay the costs.

The Services.

TERRITORIAL FORCE.

PROMOTIONS OF REGIMENTAL MEDICAL OFFICERS.

IT is notified from the War Office that promotions of Regimental Medical Officers of the Territorial Force are governed by the same conditions as those which apply to officers of the Royal Army Medical Corps (Territorial Force). In both cases recommendations for promotion should be submitted when such officers have completed the necessary period of service, and are otherwise qualified for promotion. When a vacancy occurs in the command of a medical unit, recommendations as to the manner in which it should be filled will be similarly submitted.

THE EAST SURREY BEARER COMPANY.

THE annual dinner of the East Surrey Bearer Company, R.A.M.C. (Vols.), now the 3rd Home Counties Field Ambulance of the Territorial Force, took place on January 23rd at Kingston, Lieutenant-Colonel J. J. de Zouche Marshall being in the chair. The guest of the evening was Lieutenant-General Sir E. R. Elles, Chairman of the Surrey County Territorial Association, and among the officers present were Lieutenant-Colonels E. O. Wright, R.A.M.C., and J. Harper; Surgeon-Major T. H. Dickson; Majors E. St. Vincent Ryan and H. Beale Collins; and Captains L. N. Lloyd, D.S.O., R.A.M.C., G. A. Edsell, M.D., and E. Canny Ryall; and Lieutenants A. J. Preston, A. S. Coad, R. L. Nares, and G. L. Edsell. About seventy of the rank and file of the corps also attended the dinner. When proposing a toast to the guests Colonel Marshall mentioned that he wanted the clergy and doctors of Surbiton to remember that the Home Counties Field Ambulance was a distinctly educational corps, and that all its members received most valuable training in first aid and in the subjects taught by the Army Medical Corps.

AFTER the first international congress on accidents to workmen held at Liége in 1905 the Permanent International Congress chose Rome as the place where the second congress should be held. The congress will open on May 23rd of this present year. The following are the principal questions on the programme: (1) The organization of medical services for the observations and treatment of the consequences of accidents to workmen. (2) The organization of a medico-legal service to deal with cases of accidents and the establishment of definite criteria whereon the reports of experts shall be based. (3) The diagnosis and prognosis of post-traumatic nervous affections. (4) The estimation of the working capacity of the workman before and after the accident—(*a*) method of investigating fitness for work; (*b*) the importance of the condition before the accident; (*c*) anthropological and sociological criteria; (*d*) the influence of the varying circumstances on the accident. (5) The influence of the mode of compensation on the evolution of post-traumatic nervous diseases. (6) Statistical data from the medical point of view, since the application of the law as to compensation. The General Secretary of the Congress is Dr. Baudone, Medical Lieutenant-General in the Italian army, and Chief Military Inspector of Health, 38, via Borgognona, Rome.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following degrees were conferred on January 16th:

M.C.—R. Davies-Colley, Emm.
B.C.—A. E. Stansfeld, Joh.; F. J. Cleminson, Gonv. and Cai.; R. F. Priestley, Gonv. and Cai.; B. Hughes, H. Selw.

The following have passed the examination in Tropical Medicine and Hygiene:

H. C. Brown, J. Dorgan, H. R. Dutton, L. T. R. Hutchinson, J. M. O'Brien, A. G. Payne, P. L. Stallard, H. E. Stanger-Leathes.

UNIVERSITY COLLEGE, LONDON.

Lectures on National Eugenics.

A course of eight lectures on National Eugenics, in connexion with the Galton Laboratory, will be given at University College on Tuesdays at 5 o'clock beginning on February 23rd. The first lecture will be given by Professor Karl Pearson on "The Purport of the Science of Eugenics." On the four following Tuesdays the lectures will be given by Mr. D. Heron, and will deal with the following subjects: Methods of Eugenic Inquiry; Transmission of Physical Characters in Man; Transmission of Psychical Characters in Man; Inheritance of Disease and Deformity. The course will be continued in the third term, beginning on May 4th, when Miss E. Elderton will lecture on "Effects of Kinship in Marriage" and "Comparison of Heredity and Environmental Factors." Full particulars of the lectures can be obtained from the Secretary of University College.

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examinations indicated:

First Examination.—H. L. Batra, K. Bhushan, E. W. Marsh, A. F. Henriques, P. A. Dastoor, B. G. Shiraodkar, A. I. Luke, M. M. Daru, J. K. Sharma, D. B. Gazdar, E. D. Shroff, N. B. Mehta, K. Nath, N. S. Williams, S. N. S. Aiyangar, T. Sabastian, W. Elder, J. Hegarty, H. W. Ward, V. T. W. Eagles, F. Chand, W. A. Reardon, W. A. Rees, H. W. M. Wallace, C. M. Willmott, E. P. Ghose, J. W. Craig, F. F. Keravalla, W. P. Over, P. C. Banerjee, and A. S. Douglas.

Second Examination.—E. Thorp, T. E. Ferguson, J. M. Chrystie, J. M. Dalzell, F. W. Grant, W. J. H. Davies, Z. A. de Cruz, E. C. Hamilton, D. A. Evans, N. P. Vaid, and J. Adami.

Third Examination.—B. J. Hattam, H. V. A. Gatchell, W. Whitfield, W. T. Henderson, H. L. Batra, E. W. Wilbourne, G. B. Moon, Emma M. Johnstone, D. Hickey, K. Bhushan, E. W. Marsh, A. F. Henriques, and A. I. Luke.

Final Examination.—H. D. Dadyseth, F. J. de Souza, W. F. Mitchell, T. M. Jamieson, A. G. Curphey, J. B. Kelso, W. F. Buist, G. N. Braham, Kathleen Reed, Hilda L. Keane, T. J. Vaughan, G. F. Forde, H. A. Higginson, H. W. Turner, A. O'Flaherty, B. M. Tembe, E. Gibson, E. C. Wilford, J. E. Brown, A. M. Shah, G. V. Bhatavadekar, H. R. Gogte, A. Davidson, K. S. Commissariatwalla, T. B. McKendrick, F. H. Kiddle, D. S. Sardesai, P. Stewart, H. S. Harling, J. Aiken, and E. J. Lumsden.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

First Professional.—M. J. Ahern, A. T. Cannon, T. F. Collins, H. J. Cotter, C. J. Hegarty, C. Hennessy, C. F. D. Kelly, F. Mulcahy, A. Verling.

Second Professional.—*T. F. O'Donnell, J. H. Barry, P. W. Black, P. Daly, J. M. Gilmor, C. J. Halpin, A. Hamilton, C. W. Joynt, C. J. Lenahan, A. G. MacIlwaine, D. McDevett, A. J. Neilan, P. J. O'Connell, D. P. H. Pearson, F. Phelan, C. Roche, P. R. Todd, A. Wiley, F. Webster.

* With honours.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have been approved at the examinations indicated:

Surgery.—*†G. K. Aubrey, *J. Bramley-Moore. *†J. B. Tackaberry, †H. B. Waller, *†H. V. White.
Medicine.—†H. W. B. Danaher. *†J. S. Rowe, *†J. B. Tackaberry.
Forensic Medicine.—J. B. Tackaberry.
Midwifery.—H. S. Brown, A. C. Jenkins, B. A. Keats, J. B. Tackaberry.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. G. K. Aubrey, J. J. S. Rowe, J. B. Tackaberry, H. B. Waller, and H. V. White.

It is announced that an International Antivivisection and Animal Protection Congress will be opened in London on July 6th. In connexion with the congress there will be an exhibition at the Caxton Hall of appliances for making the transport and slaughter of animals humane, and of clothing materials which have been obtained without any cruelty to animals.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL CHANGE OF ADDRESS.

The offices of the British Medical Association and of the British Medical Journal have been removed to 429, Strand.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

H. B. wishes to know of a school or tutor in France where a boy of 10, whom he wishes to send up to Osborne, may receive a good English education, and at the same time learn to speak French fluently. H. B. would like to hear from a parent who has had personal experience of such a place, and who can vouch for the sanitation of the house and locality.

Treatment of Bronchial Asthma.

A Medical Man who has suffered from bronchial asthma for many years, has been able by care in diet and his mode of living to attend to his practice, but during the last six months has been much worse. He asks for advice, but adds that he cannot take potassium iodide.

ANSWERS.

Ajax.—Country members of the Association may have letters sent to the office of the British Medical Association, 429, Strand, London, W.C. Letters will also be forwarded on request.

LETTERS, NOTES, ETC.

Cancer of the Tongue.

Dr. A. S. Morton (Putney, S.W.) writes: I have read with very great interest the article on cancer of the tongue by Mr. Butlin. The statistics seem evidently to have been prepared with great care, but there appears to me to be one great source of fallacy, and that is the diagnosis, for if the diagnosis is wrong the entire statistical results must be wrong also. Many years ago a case of cancer of the tongue was seen by me; it was treated in the orthodox manner of the period, such as various local measures, antisyphilitic and other constitutional remedies, removal of a tooth, avoidance of tobacco, and so forth; finally, the man was seen by Sir James Paget, who pronounced the case cancer of the tongue, and advised removal of the organ. The man was afterwards seen by Mr. Edward Cock, of Guy's, who said it was not cancer at all; he advised a certain line of treatment, which was useless; and finally the patient disappeared from observation. Some considerable time afterwards I met the man in the street. He then said he was quite well, and the tongue appeared to be healed perfectly, due to the skill of some old woman. Now, if this tongue had been removed, either with the entire glands or otherwise, it would have gone to swell the percentage of successful operations. Regarding microscopical diagnosis, some time ago, at a post-graduate course of lectures, Sir Jonathan Hutchinson said, "I do not wish to decry the use of the microscope as an aid to diagnosis in cancer, but do not rely upon it entirely." He then proceeded to relate a case in which the subsequent results proved it to be one of cancer, although the histologist had pronounced it to be benign. I do not pretend to be one of the "scientific" and "academic" brigade of the Royal College of Surgeons, but I could multiply such cases as the above, and I have no doubt that many of the despised and ignorant members of our College could do likewise. I can also state that I have seen many cases of cancer of various organs where the patients had declined all surgical interference, and yet they managed to live for a great number of years. It would be very interesting if some statistics could be prepared showing how many years such patients do live after diagnosis and refusal of operation, and in some way to compare these cases with those who have suffered the operation to be performed.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication; and, if not paid for at the time, should be accompanied by a reference.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.